

ANNEXES

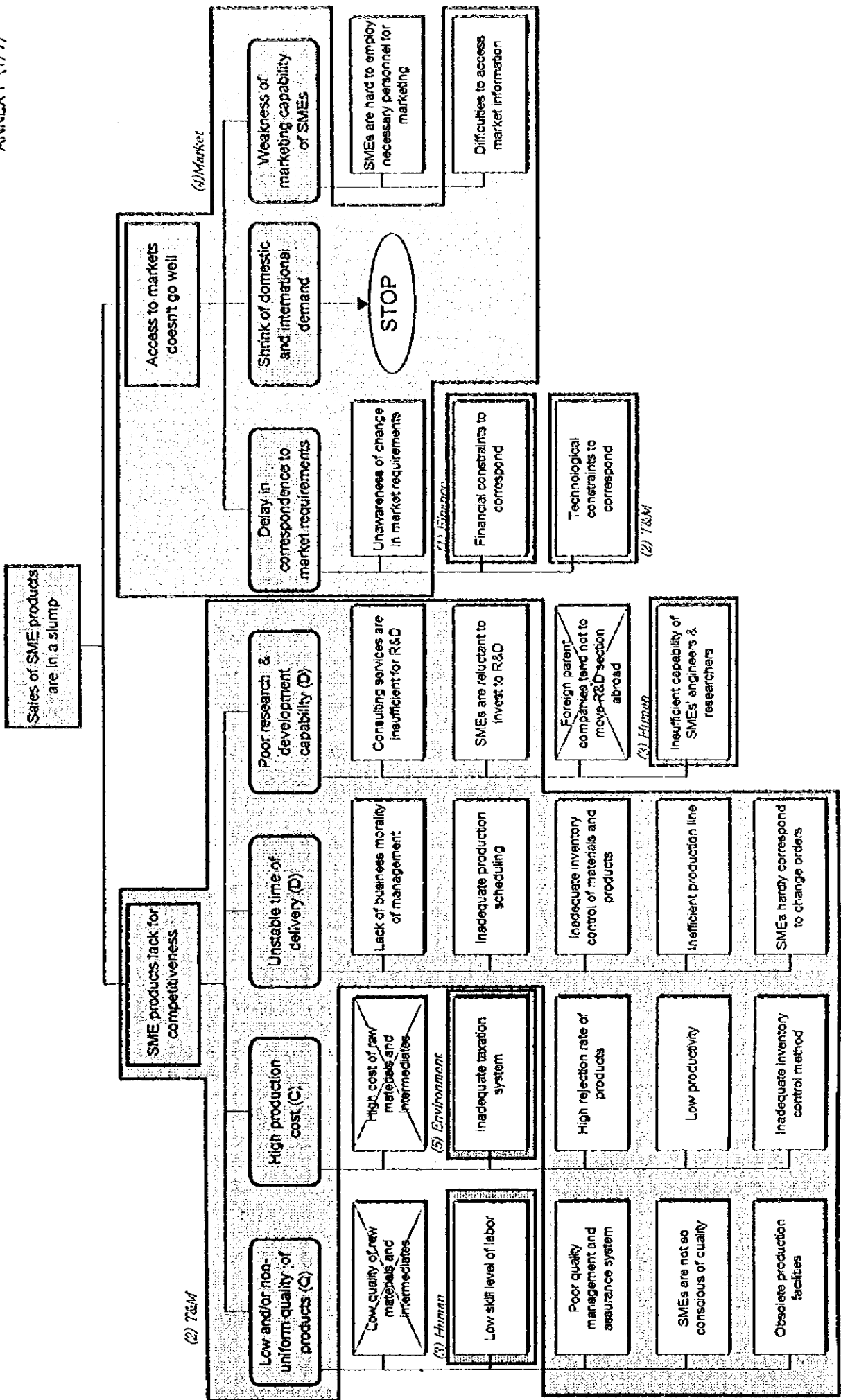


ANNEX I Problem Tree for SME Development



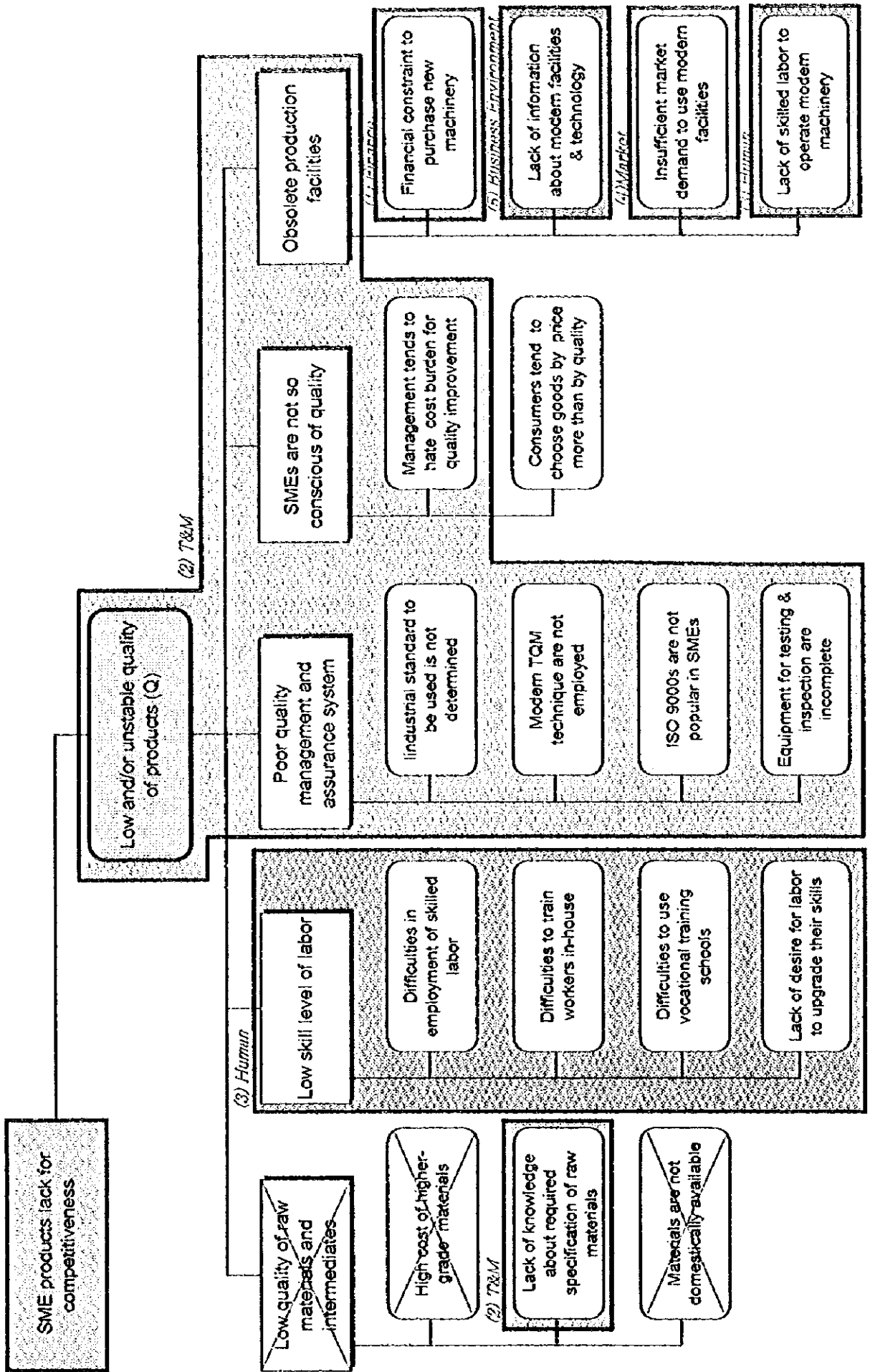
# PROBLEM TREE OF SMES IN THAILAND (OVERALL)

ANNEX I (1/7)

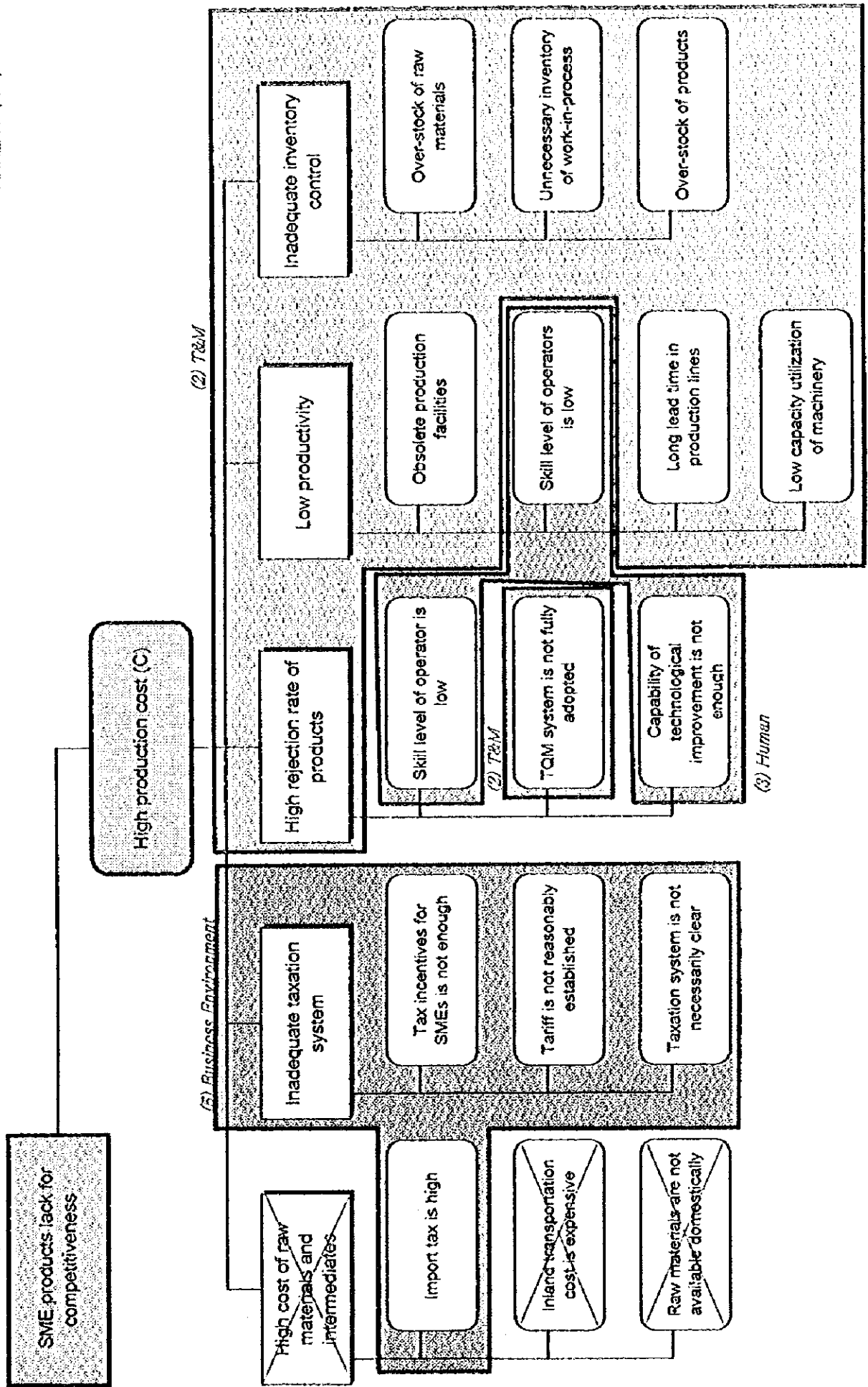


# PROBLEM TREE FOR 'QUALITY'

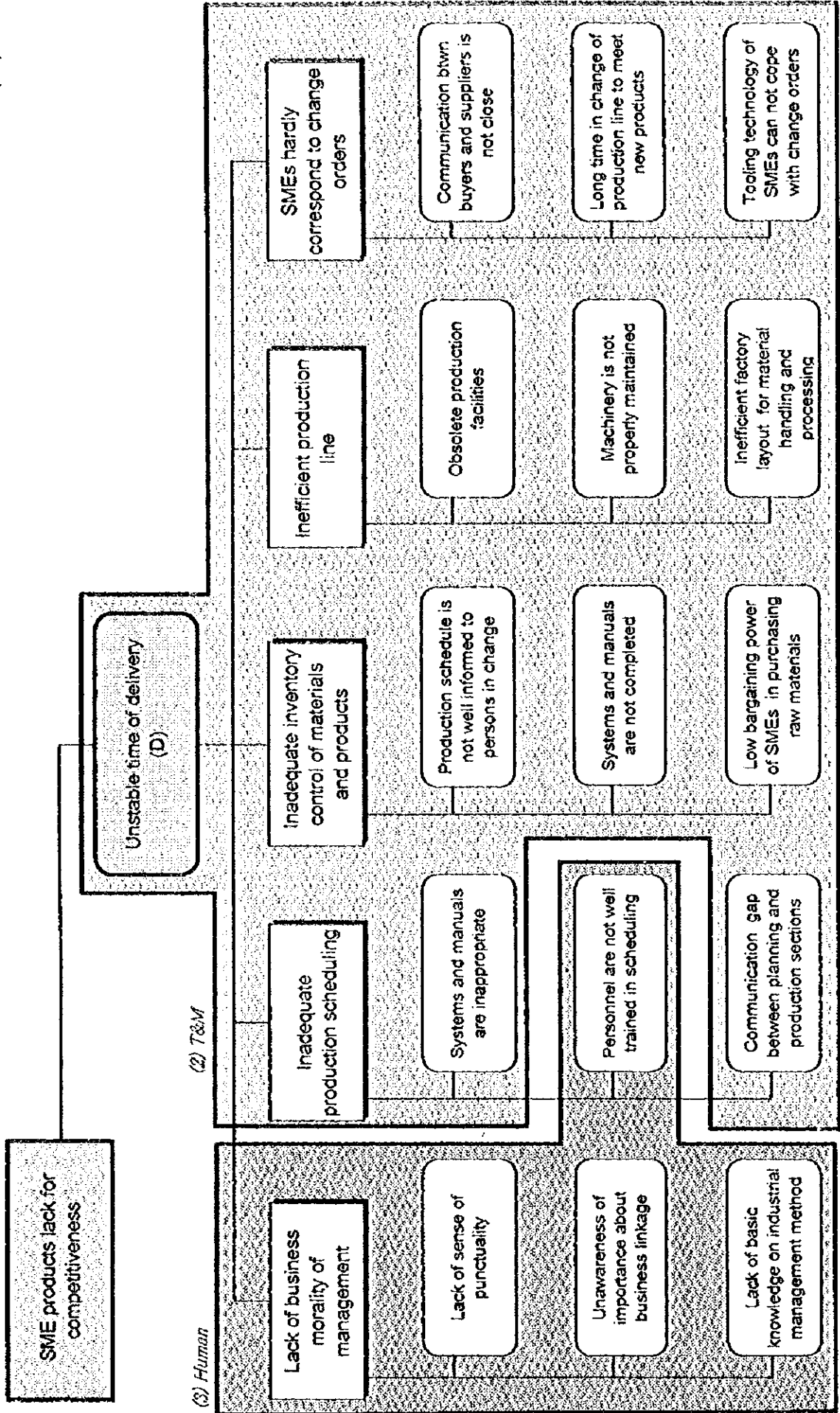
ANNEX I (2/7)



# PROBLEM TREE FOR 'COST'

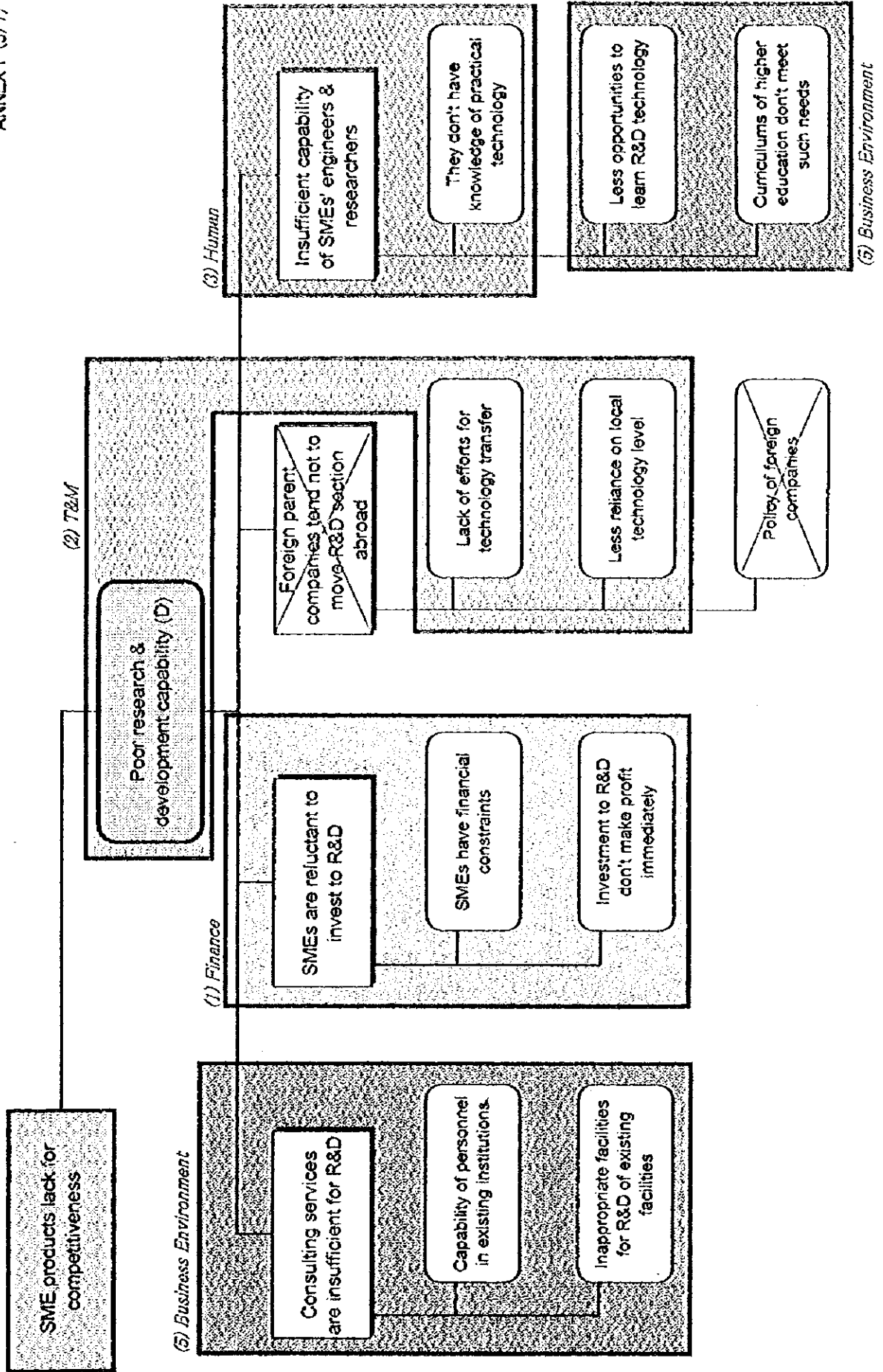


# PROBLEM TREE FOR 'DELIVERY'

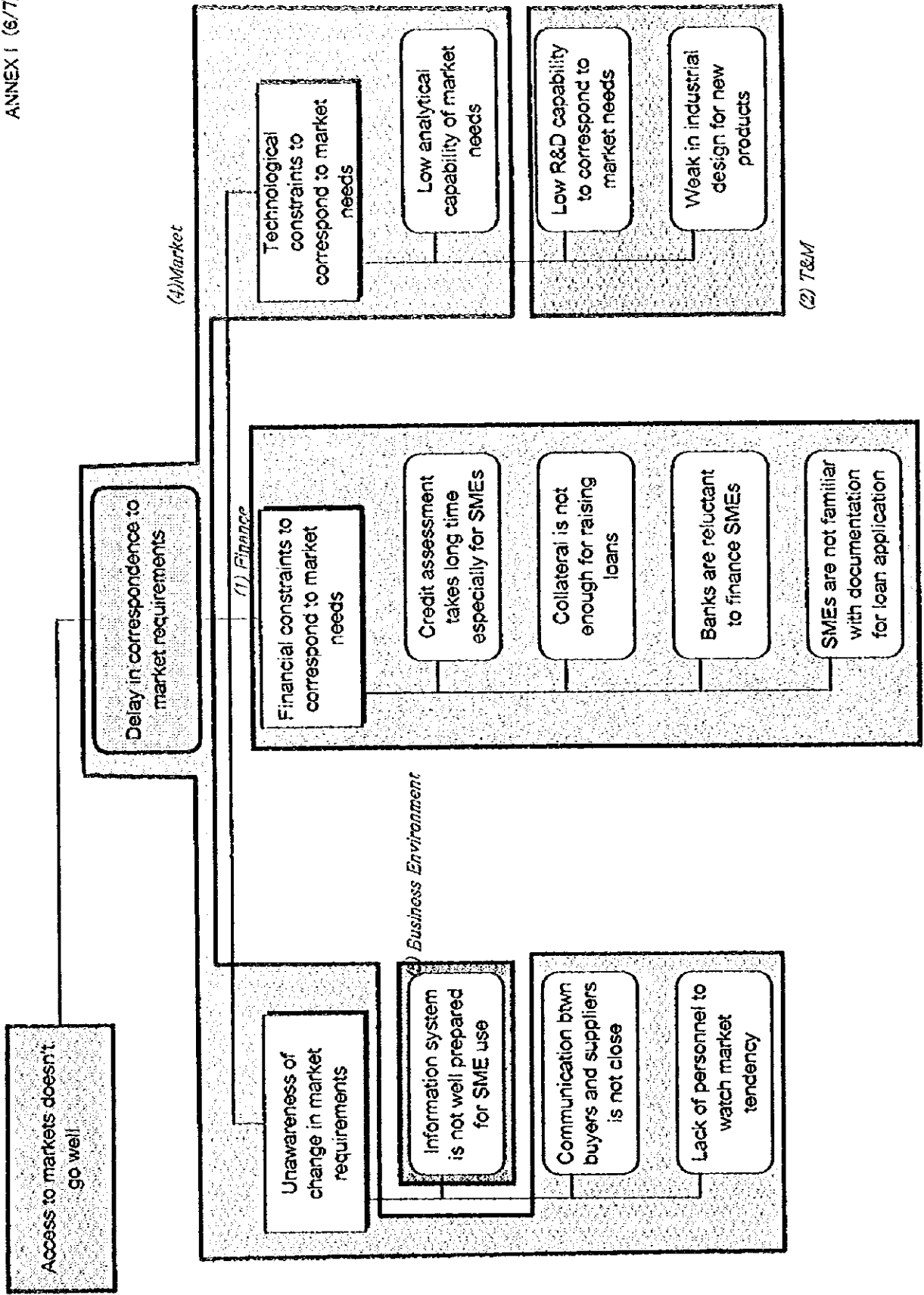




# PROBLEM TREE FOR 'R&D'

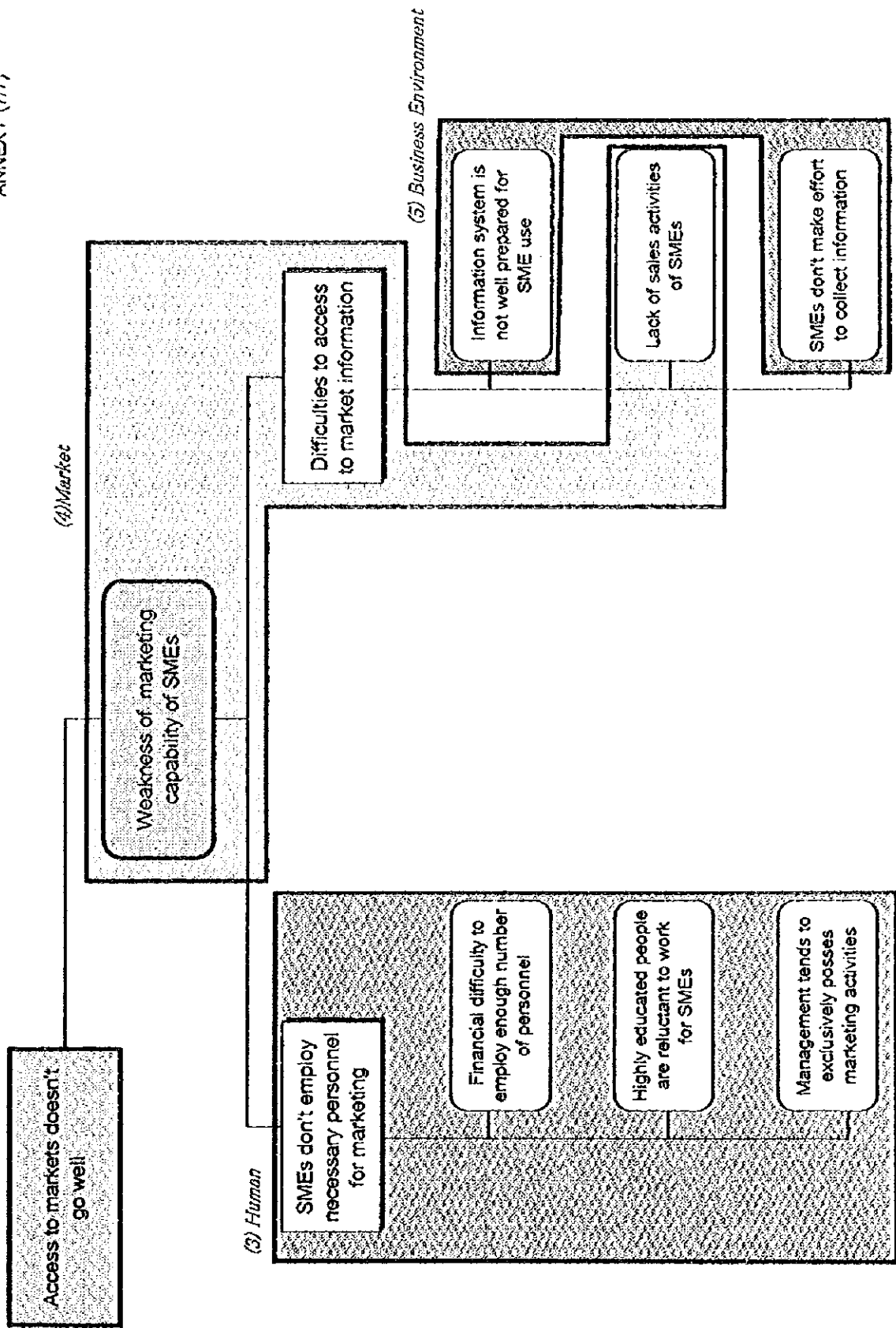


# PROBLEM TREE FOR 'MARKETING'



# PROBLEM TREE FOR 'MARKETING'

ANNEX 1 (7/7)





ANNEX II Questionnaire



## Questionnaire Survey

### A. Company Profile

Name of Company: \_\_\_\_\_

Address: \_\_\_\_\_

Tel No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Established in: \_\_\_\_\_

MOI Registration:     Yes         No

BOI Zoning:          Zone 1     Zone 2     Zone 3

BOI Promotion:     Yes         No

Amount of Fixed Assets: \_\_\_\_\_ million bahts

Capital (registered capital): \_\_\_\_\_ million bahts

Domestic: \_\_\_\_\_ %

Foreign: \_\_\_\_\_ % (Countries: \_\_\_\_\_)

No. of Employees: \_\_\_\_\_ (as of March 1999)

Main Products:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### B. Situation of Business/Operation

(1) Please check the total sales of your company for the recent three years.

	1996	1997	1998
Less than 5 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 to 10 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 to 20 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20 to 100 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100 to 200 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
200 to 500 mil.bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
More than 500 mil. bahts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(2) Please break down your total sales into the three sources.

	1996	1997	1998
Domestic sales	_____ %	_____ %	_____ %
Export (Incl. Indirect Export)	_____ %	_____ %	_____ %
<b>Total</b>	<b>100 %</b>	<b>100 %</b>	<b>100 %</b>

(3) If you had direct export sales in the above three years, please write in major countries to which you exported.

\_\_\_\_\_

(4) What is the impact of the economic crisis on the profit of your company?

Decreased (by %)       Increased (by %)       No change

(5) Please write in the number of employees for the recent 3 years.

1996	1997	1998
_____ persons	_____ persons	_____ persons

(6) Please write in the rate of capacity utilization for the recent 3 years.

1996	1997	1998
_____ %	_____ %	_____ %

### C. Financing

(1) Please write in your financing sources and how to use each of them.

Name of Financiers/Banks	a) Type	b) S/L	c) Rate	d) Usage	e) Amount
1. _____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____

Please use the following symbols for filling the columns of a) to e).

- a) Type:    (A) State banks  
               (B) Commercial banks  
               (C) Non-bank financial corporations  
               (D) Special Institutional credit by the government



- (E) Informal Financing (family, friends, relatives, groups for credit)
- (F) From overseas (off shore)
- (G) Other (please specify: \_\_\_\_\_)

b) S/L: S : Short-term loan (repayment term of less than one year)  
 L : Long-term loan (repayment term of one year or more)

c) Rate: Please write in the interest rates per year

d) Use: WC : Use for working capital (purchase of raw materials, etc.)  
 FX : Use for purchasing fixed assets such as land & building, etc.  
 OT : Others

e) Loan Amount at the time of the borrowing (million bahts):

- (A) less than 0.5
- (B) 0.5 to 1.0
- (C) 1.0 to 5.0
- (D) 5.0 to 10.0
- (E) more than 10.0

(2) Do you know, have you ever applied for, or have you ever borrowed loans from the following institutions? Please check and fill in.

	Know	Applied	Borrowed
SIFC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _____ mil.bahts in 19__
IFCT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _____ mil.bahts in 19__
Thai Export-Import Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _____ mil.bahts in 19__
Khruang Thai Bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _____ mil.bahts in 19__

Note: SIFC----- Small Industrial Finance Corporation  
 IFCT-----Industrial Finance Corporation of Thailand

(3) At present, do you need loans or credits?

Yes                       No

If Yes, please answer the following.

Approximate amount: \_\_\_\_\_ mil. bahts

For what do you use them?

1.  Working capital
2.  Purchase of machinery and equipment
3.  Purchase of inspection/measuring equipment
4.  Land acquisition
5.  Factory building construction

- 6.  Expenditure for R& D
- 7.  Relocation of the factory site
- 8.  Purchase of waste treatment facilities
- 9.  Other(Please specify:\_\_\_\_\_ )

(4) What are the most important problems you have faced in borrowing loans from banks or corporations? Please check two (2) most applicable answers from the following.

- 1.  Insufficient mortgage or collateral to meet your loan requirement
- 2.  Complicated procedures and documents required
- 3.  Too much time from application to Implementation of financing
- 4.  Lack of official credit guarantee to supplement insufficient mortgage
- 5.  Banks' passive attitude to finance SMEs
- 6.  Banks do not finance the full amount of loans required.
- 7.  Banks have become more reluctant to finance after the economic crisis.
- 8.  Other(please specify\_\_\_\_\_ )

(5) Had you known, applied to, or used SICGC (Small Industry Credit Guarantee Corporation) when you were financed by banks? Please check applicable items in the following.

- I had not known even the name of SICGC.
- I had known the name of SICGC.
- I had applied to SICGC.
- I had been guaranteed by SICGC.

**D. Impact of the economic crisis**

(1) What are the impacts of the economic crisis on recruitment and employment of workers?

1) Recruitment

- become easier
- become more difficult
- no change

2) Employment

- decreased by (    %)     increased by (    %)     no change

(2) What are the impacts of the economic crisis on raising funds?

- |                                      | become easier            | become more difficult    | no change                |
|--------------------------------------|--------------------------|--------------------------|--------------------------|
| Working capital                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Investment capital                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (credit for purchasing fixed assets) |                          |                          |                          |

### E. Urgent matters to improve for the future

Your company may have urgent matters to improve in order to cope with the economic crisis in 1997. Among the following, what do you think is the most urgent and serious matters for further growth of your company from an overall point of view? Please choose three items and put in 1,2,3 in the parentheses in the order of urgency and seriousness.

- ( ) Modernization of machinery and equipment
- ( ) Transfer and modernization of production technology
- ( ) Up-grading of quality control technology
- ( ) Up-grading of capabilities of manpower
- ( ) Financial support by institutional credit facilities
- ( ) Strengthening of marketing activities
- ( ) Promotion of direct export of parts/components
- ( ) Education of management/entrepreneurs
- ( ) Strengthening of various technical institutions
- ( ) Diversification of purchasing channels for materials, parts, etc.
- ( ) Other (please specify: \_\_\_\_\_ )

### F. Strategies to cope with the economic crisis

What strategies has your company taken to cope with the economic crisis?

Please check all applicable items from the following.

- Expansion of exports
- Expansion/Diversification of domestic sales channels
- Development/Diversification of products
- Shutdown of production facilities
- Reduction of employees
- Reduction of production cost
- Expansion of financing sources
- Other (Please specify \_\_\_\_\_ )

### G. Necessity of the Government Support

(1) The government of Thailand is now making strenuous efforts to promote SMEs by providing them with infrastructures including legal preparation and various privileges. What kind of

government support do you urgently require to overcome the economic crisis? Please choose two most important items from the following.

- Reliable policies and continuous support for SMEs by the government
- Easy access to financing
- Assistance for technology up-grading
- Support in marketing and sales promotion
- Human resources development
- Tax incentives/subsidies
- Other(please specify \_\_\_\_\_)

(2) How do you evaluate the supporting facilities provided by the government? Please choose either of the two viewpoints and answer.

- We do not expect so much from the new SME supporting policies and systems by the government.

Please describe the reasons.

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- We expect so much from the new SME supporting policies and systems by the government. Please describe the areas you expect.

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(3) Please freely describe your requests, expectations, and complaints to the government policies and systems for supporting SMEs.

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#### H. Requirements to the factory diagnosis system

The Ministry of Industry has now tried to establish a factory diagnosis system for the purpose of modernizing and further promoting SMEs in Thailand. What kind of diagnosis do you hope to receive from this system? Please check the two most important areas as you may expect of the factory diagnosis system.

- No interest
- Production technology
- Production management
- Merchandizing
- Marketing/Sales management
- Financial management
- Labor management
- Information management
- Organization management
- Other (Please specify: \_\_\_\_\_ )

**I. Requirements to the Automotive Institute and The Electrical & Electronics Institute**

Are you manufacturing the following parts and components?

- Automotive       Motorcycle       Electrical/Electronic       No

If you are not manufacturing automotive parts, motorcycle parts, or electrical/ electronic products, please skip the following question.

If you are manufacturing automotive parts, motorcycle parts, or electrical/electronic products, please answer the following question.

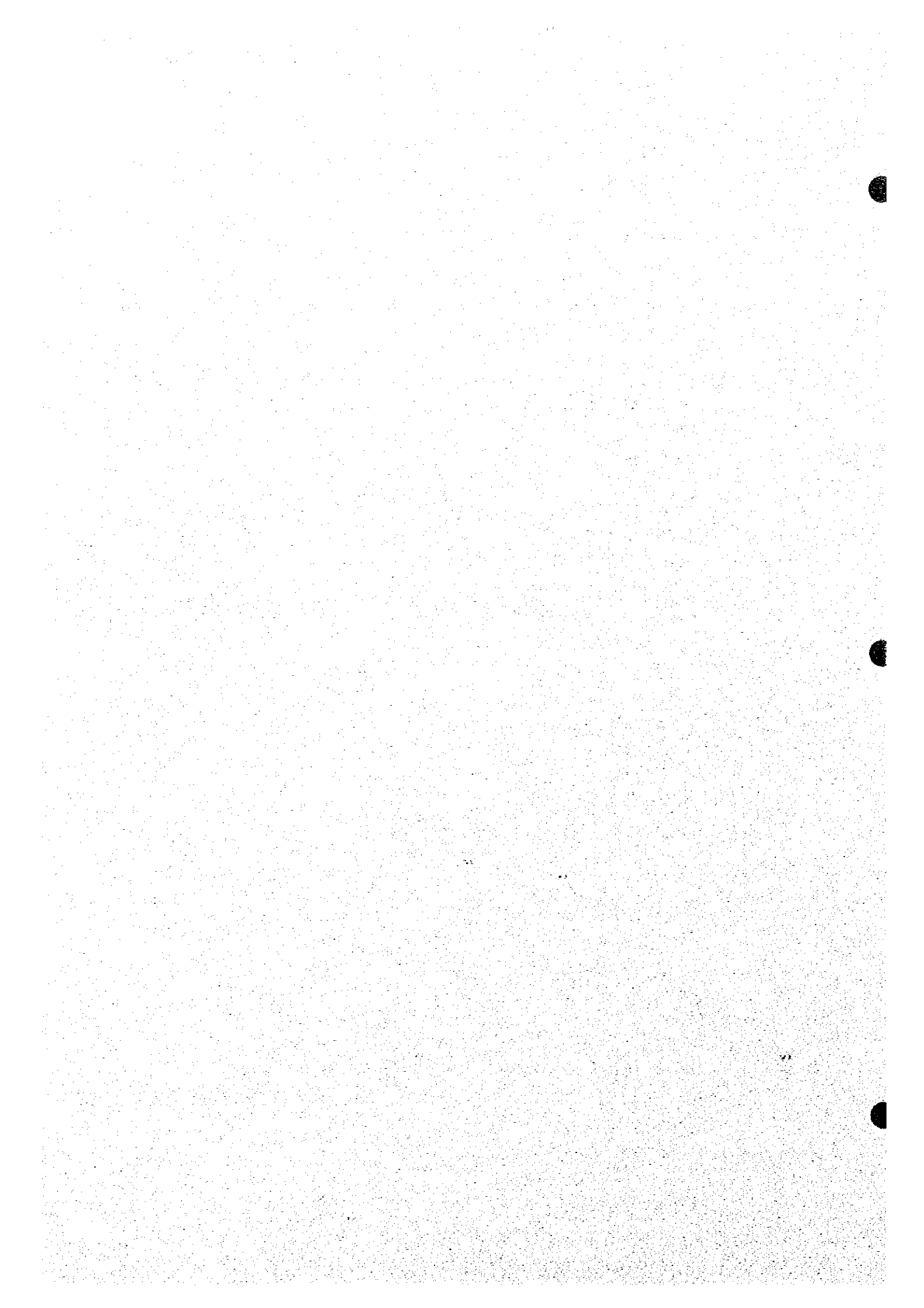
The government has just established the Automotive Institute and the Electrical & Electronics institute to assist SMEs in developing their business. What kind of functions do you expect those institutes to perform? The following lists some prospective functions.

Please check the three most important functions as you may expect and would like to use.

- Coordination between the government and the private sector
- Coordination for linkage of the private sector
- Info services and publication on technology, marketing, financial indicators
- Inspection and certification for industrial standards (e.g. export inspection)
- Testing of materials and products for R&D and so on
- Testing and Calibration of measuring equipment

- Guidance for acquisition of ISO9000s/14000, QS9000, etc.
- Technological & managerial guidance including clinic services
- Listing of foreign/local professionals and their intermediary services
  
- Training and education courses for entrepreneurs and managers
- Training courses for workers (technicians/skilled labor)
  
- Other (please specify: \_\_\_\_\_ )

## ANNEX III Detailed Project Studies





**Project No. 1.1 Restructuring of the Credit Guarantee System**

**1. Rationale**

From the questionnaire survey done by the World Bank, the following points regarding SME financing are observed.

**(1) Change in level of output after the crisis and principal reason.**

Change of Output: Yes, 79%; No, 20%

Main Reason:

Domestic Demand Decline 74%

Foreign Demand Decline 31%

Bottleneck which SME report;

Suppliers credit 27%, Working capital 34%, Credit for expansion 23%, Costly loan 53%, Heavy debt burden 41%, Volatility of foreign exchange rate 73%, Labor costs 56%, Raw materials 22%, Non-delivery of goods 21%.

Based on this result, it can be pointed out that the most serious problems for SMEs are the following.

**(2) Investment for the future**

Favorable outlook for economic recovery so as to expect recovery of demand.

Stabilization of the baht rate.

**(3) Short Term Problems to be solved**

High cost, and high level of outstanding debts is a real problem they are facing which can be taken as a "liquidity problem."

Taking up this liquidity problem issue for SME only, the following is the result of the World Bank Survey.

Whether the SME companies are facing liquidity problem or not,

Yes, 60%; No, 40%

The reason of this liquidity problem are;

Lower revenue 90%, High input cost 78%, Insufficient workers capacity 35%, Debt burden 63%.

These results support the observation made on empirical and anecdotal evidence that lower demand and high import cost are the main factors which affect the liquidity problem.

#### **(4) Situation of Credit Guarantee Scheme in Thailand**

There Small Industry Credit Guarantee Corporation exists.

However, SICGC's capability to provide credit guaranties is limited due to the following reason.

First, the Theoretical merit of a credit guarantee scheme is yet to be adequately developed in Thailand. Each bank has access to different groups, but there is no existing function to horizontally support SMEs.

The proposed Credit Guarantee Corporation would have the function of broad-based collection of information about companies and sectors.

Second, since shareholders of SICGC are mainly banks, those banks are used to using the SICGC to cover the credit of risk uncollateralized portion of their loans and SICGC could not oppose instructions from the banks to that effect.

In Thailand, commercial banks have a dominant position in SMEs financing. SMEs are facing a liquidity problem and also difficulty in obtaining access to credit, especially for short term working capital. SMEs are normally lacking collateral for bank loans due to their limited cash flow and short history of business. After the economic crisis, banks have become very cautious regarding credit risk, especially that involving SMEs. To support existing and future SMEs, the credit guarantee scheme should be enhanced in such a way as to compensate for the problems of lack of collateral and over-cautiousness of credit risk of SMEs by commercial banks and SFIs.

## **2. Purpose**

To provide a credit guarantee scheme which could work out horizontally to the benefit of all commercial banks and SFI which finance SMEs, and their SME clients.

## **3. Output of the Project**

- (1) Credit guarantee capacity which could be used by commercial banks and SFI to support their SME financing.
- (2) Basic information related to SME credit would be accumulated.
- (3) Procedures and techniques of credit analysis by commercial banks and SFIs will be improved.
- (4) Information on various (theoretically, all) sectors would be collected and analyzed based on above items (2) & (3).

## **4. Project Description**

### **(1) Shareholders Structure**

The ownership structure of the SICGC is to be avoided. The new credit guarantee corporation's equity should be put up by the companies (in practice, maybe by the Federation of Thai Industry, Chamber of Commerce, etc.) and government. Equity holding by banks should be kept at a minimum level so as to have some advising function for the operation, but not so much as to affect management policy of new credit guarantee corporation.

### **(2) Sovereign support for ultimate guarantee payment capability**

The Thai government should put up a contingency fund to support the credit-worthiness of the new corporation. Without having this contingency, banks and companies will not feel comfortable to utilize the services offered.

#### **(a) Incentive for banks**

##### **(i) Fee Level**

Since the guarantee fee would be an additional cost of SME financing, the guarantee fee level should be kept to a minimum, which is essential

to be used by Banks. The government and companies should consider this is for the purpose to accumulate data on companies and sectors.

**(ii) Risk Weight Treatment by Bank of Thailand**

In order to give an incentive to banks to utilize new credit guarantee company, the Bank of Thailand should rule that loans from banks backed by a new credit guarantee can be treated as very low risk weight loan (perhaps 0% to 20% depending on the credit guarantee coverage ratio).

**(b) Measures to prevent a moral hazard**

**(i) To prevent utilization of credit guarantee for conversion of non-performing loans to new loan with credit guaranties.**

Some mechanism and rules should be considered, for example:

- Bank of Thailand establishes a ceiling of credit guarantee utilization bank by bank, based on the outstanding performing loan balance.
- Bank of Thailand issues a circular to banks and companies instructing them to not utilize the new credit guarantee scheme for conversion non-performing loans to new loans with credit guaranties.
- Once such a conversion was discovered, the name of the bank would be disclosed immediately and a penalty (e.g., the ceiling of utilization of credit limit would be reduced by a certain amount or the credit guarantee fee would be raised 50% than normal). would be imposed.

**(ii) To prevent usage of a credit guarantee for a risky loan without collateral.**

There are two methods to prevent this moral hazard.

- During the first two years of operation the guaranties would mainly be used for loans with collateral. Total guarantee exposure to the loans without collateral would be limited until a threshold amount of total guarantee exposure is reached.
- By having operating corporations as the major shareholders of the new credit guarantee corporation, banks' potential influence pressure to utilize the guaranties for the risky loan would be prevented.

(iii) To prevent the usage by companies as a easy way to get financing without collateral.

To prevent usage by companies as an easy way to get financing without collateral, commercial contracting companies should provide the following type of letter or certificates: Memorandum of understanding, Comfort letter, Letter of guarantee, or Commercial transactions certificates.

## **5. Implementation Body and Financing Source**

### **5.1 Possible Organizational Structure of New Credit Guarantee Corporation**

Since this Project needs strong support by the Thai government, it is premature to describe its organization structure, expected job creation effects, etc. Therefore, the following is a preliminary idea about a possible organizational structure.

As of the end of December 1997, the total loan exposure of commercial banks in Thailand was 5,702 billion bahts (4,680 billion at Thai commercial banks and 1,022 billion at foreign banks). It would be hard to imagine that foreign banks would utilize the new credit guarantee scheme, since their clients are mainly multinational and large Thai companies. Therefore, the base of the guarantee demand forecast could be 4,680 billion. Since IFCT's loan exposure to SME is around 20% of total loan exposure, 20% of 4,680 billion means the loan exposure to SME in Thai could be around 936 billion bahts. If we take roughly 50% of this amount to be non-performing, the actual market base is around 500 billion bahts.

Then, first,

$500/0.7$ =around 700 billion bahts are collateral market price.

If banks provide conservatively 20% of excess space of market price and provided loan amount, the total possible guarantee amount would be 140 billion bahts. If we conservatively set the utilization ratio at 50% of this 140 billion, a conservative estimate of the market base will be 70 billion bahts. To deal with this 70 billion bahts markets, it would be necessary to have following staff.

One loan amount could average of 10 million bahts. The total number of guaranties could be 7,000. Usually it takes at least one week for credit analysis. One credit officer could handle around 48 transactions in a year. Then, the total credit officers could number 145 (say 150 persons).

After two years of operation, this number should be doubled assuming that the non-performing loan problem is solved, while all other factors are unchanged.

Credit officers could be hired from among former employees of finance companies and banks.

For the initial phase operation, annual expenditure and revenue could be considered as follows;

(Cost of personnel and other maintenance)

Number of credit officer	150
Number of administrative & other indirect staff	40
Directors & other executive officers	10 (Total 200)

Monthly salary, 25,000 bahts in average; total salary cost, 5 million bahts.

Indirect cost (office space rent, water, telephone, etc.) would be equal to total salary cost. Overall cost of the corporation would be 10 million bahts (Default Forecast).

For this, we should in 2 tranches.

First tranche would be 4/5 of 70 billion bahts which can be said low default forecast since this is the portion with collateral. If we use a 5% default rate, the possible loss from this tranche could be  $56 \text{ billion} \times 0.05 = 2.8 \text{ billion bahts}$ .

The second tranche (1/5 = 14 billion bahts) can use a 10% default rate. =  $14 \text{ B} \times 10\% = 1.4 \text{ billion bahts}$ .

Overall possible loss from this default portion could be 4.2 billion bahts

(Revenue Side)

**Revenue forecast (guarantee fee):**

If the corporation charges a 1% fee on the guarantee, guarantee fee revenue could be 70 billion x 1 % = 700 million bahts.

**Interest revenue from contingency fund**

If the Government issue a bond of 70 billion bahts as the contingency fund and allows allocation of interest on that bond to be used for the operation of the corporation, the interest rate level could be as follows:

(4.2 billion possible loss + 10 million bahts cost) - 700 million fee revenue = 3,510 million bahts / 70 billion bahts = around 5% level of interest.

This interest rate can be said as "sustainable" under actual market conditions level.

Underlying funding for this government bond issue could be financed by international organizations and/or developed-country governments.

**6. Activities**

**(1) List of Activities**

- 1) Provide short-term guaranties to existing customers
- 2) Provide short-term guaranties to new customer
- 3) Provide guarantee on long-term capital investment loans
- 4) Credit analysis using accumulated credit related information and self-developed database
- 5) Sectoral analysis using accumulated credit related information so that the credit guarantee corporation will be prepared to analyze the creditworthiness of new customers

**(2) Project Phases**

Phase 1 would comprise setting up of the new credit guarantee corporation. Shareholders might include the Federation of Thai Industry, Chamber of Commerce, other bodies, and the government. Equity holding by banks should be kept to a minimum level.

In Phase 2, the government puts up the contingency fund to support operations.

Phase 3 is the start of guarantee business.

**7. Expected Benefit of the Project**

- (1) SMEs who don't have enough collateral can be easier to obtain a loan from SFIs.
- (2) Facilities of SICGC (that is supposed to be the parent body of the new credit guarantee corporation) can be reinforced.

**8. Weakness of the Project**

- (1) Functioning of the corporation would influence the position and activities of the SICGC. These influences must be anticipated and SICGC related measures must be developed.  
For example, SICGC's payment capability should be supported by the Government (as a sovereign risk).
- (2) The recognition by Thai Government about the necessity.



## **Project No. 1.2 Strengthening of the SME Banking System**

### **1. Rationale**

The government's role should be complementary to that of private sector financial institutions. However in actuality, SMEs have considerable difficulty gaining access to credit.

Expectations are strong towards SFIs (especially the SIFC) to strengthen the policy-based financing to SMEs, to assist the supply of working capital and investment capital. However existing SFIs are under performing their roles due to their non-performing loans problems and lack of credit analysis capacities.

Of the total balance of loans to businesses and individuals of 7 trillion bahts, the share of SME financial institutions, 45 billion, is less than 1%. In OECD countries, loan exposure to SMEs share is slightly less than 10 %.

This project aims to enhance the function and capacity of SIFC to prepare it to be converted into the "SME Bank" in the future.

### **2. Purpose**

This Project will offer opportunities for SMEs to gain access to working capital and investment capital.

### **3. Output of the Project**

- (1) SIFC will provide direct loans of both in short and long term. Long term loans (up to 10 years) will be for fixed assets investment at MRL+100 basis points p.a. Short term loans (Promissory Note base) for working capital is to be provided at MRL+200 basis points p.a.

The interest rate would be decreased to attract SMEs.

- (2) SIFC has head office in Bangkok, one full branch in Khon Kaen and three credit facilities. SIFC will increase the number of branches to around 10, and full time personnel, over a 5-year period.
- (3) To enhance loan extension capability, SIFC is to be recapitalized to write off non-performing loans. Those loans would be sold to the Asset Management Corporation. The capital injection from the government is expected to be around 1.5 billion bahts.
- (4) Increase BIS equity percentage ratio to 8.5% for SIFC.
- (5) SIFC will improve loan management skill, including credit appraisal skill.
- (6) As a means to overcome the lack of a network, use of the agency loan system would be studied. It could be developed, utilizing major commercial banks.

#### **4. Project Description**

The project will enhance the function and capacity of the SIFC as a part of structural reform in the Thai SME banking sector.

#### **5. Implementation Body and Financing Source**

SIFC, MOF and MOI

#### **6. Required Activities**

- (1) To revise the SIFC Act B.E.2534.
- (2) SIFC will get a capital injection from the Thai Government to write off actual non-performing loans and thereby increase its capability to supply policy-based loans.
- (3) Realization of the enhanced capability would be achieved through training and increase in the number of full time experienced bankers at the SIFC, expansion of the branch network, and improvement of credit analysis capabilities. Use of agency loans may also be made.
- (4) In 2001, SIFC will expand its target industry to include the commercial and service sectors. SIFC also will change its definition of SMEs so as to be able to offer services to more SMEs.
- (5) SIFC will change the maximum size of loan per enterprise from the present 25 million bahts to 50 million bahts.

**7. Expected Benefit of the Project**

Reinforcement of SME banking facilities and SEMs financing.

**8. Weakness of the Project**

- SIFC has no experienced the business with commercial and service sector.
- Credit Guaranty Scheme is not functioning practically.



**Project No. 1.3 Establishment of an Equity Participation System  
for SMEs**

**1. Rationale**

SMEs importance in the Thai economy is well be recognized;

90% of all companies are SMEs. SMEs account for 40% of GDP, 50% of export value and 50% of all employment.

Nevertheless SMEs face many difficulties, such as related to production technology, marketing, lack of credit, lack of management skill and lack of market information.

Financial institutions have become very cautious on risk and potential SMEs face difficulty in obtaining credit. In view of the importance new and supplementary policy to help SMEs obtain funds is needed.

The development of the loan market (indirect finance through banks) and direct finance through capital market are both needed to support SMEs and entrepreneurship.

- 1.1** As one method of improving the corporate finance market, the formation of investment firms of the type known as venture capital is recommended. From the viewpoint of the Thai Government, there may be an advantage in that venture capitalists may be provided with an incentive to invest in industrial sectors or areas where policy has assigned a high level of importance. As is conventional in venture capital investment, investors are driven by high potential for capital gain, as well as (in some cases) the opportunity to actually, directly participate in business operations. With or without much participation, the companies recovering the investment derive a number of advantages, that are particular to the SME sector. The high dependency of SMEs on bank loans can be reduced, this is particularly important given current conditions in Thailand. But the companies can also make improvements in areas where they are weak relative to

large companies (and SME competitors in other countries): of production technology, marketing skill, managerial skill, market information and so on.

- 1.2 In an international perspective, at the 6<sup>th</sup> APEC SME Ministerial Meeting in April 1999 in New Zealand, the importance of capital market development and especially that of venture capital was recognized. And in the 2<sup>nd</sup> ASEAN Senior Economic Officials Meeting from April 26 to 28 '99 in Myanmar, Philippines officials offered to set up an ASEAN Venture Development Fund in order to develop international level of enterprises. Thus, there is a growing awareness in the region of the potential of venture capital.
- 1.3 In 1994, interests in the Thai private sector established the Thai Venture Capital Association which now has 38 members. Most are venture capital companies. This may be taken as a promising sign with regard to prospects for promoting venture capital investment.

## **2. Purpose**

The Project will offer opportunities for SMEs to have access to long term finance through a governmental fund and investment company that is similar in function to private venture capital firms.

## **3. Output of the Project**

It could be expected following outputs ;

1. Support SMEs to have access to long-term credit through the capital market.
2. SMEs would have chances to gain help to counter their weak points, such as in marketing, production technology and accounting.
3. Priority sector or region SMEs could be given preferential treatment.
4. Through accumulation of listed SMEs companies, transparency of companies would be improved by the development of disclosure. This process would give chances to other SMEs to try their Efforts to follow up the success companies.

#### **4. Project Description**

The Government will set up a venture capital fund and participate in new establishment of SMEs. The fund will be handled through private venture capital companies who are authorized by the Government.

#### **5. Implementation Body and Financing Source**

An implementation body (here called "the company" although its legal status remains to be determined) will be newly established under support of MOF and MOI.

#### **6. Organization and Activities**

##### **6.1 Organization of the Implementation Body**

An investment Policy Committee will be formed for the company, will set up a basic policy on investments. The Committee will be by Cabinet appointment, and will be composed of the representatives of MOF, MOI, and experts in finance and investment. The role of committee in principle will be as follows to set up basic framework of investment policy and procedure of execution; to appoint the fund managers, auditors and others, to approve the budget and to monitor performance

The Committee will appoint an Executive Board of representatives of MOF, MOI, and experts of finance and investment. The Board will appoint internal and external Auditors of the Company.

##### **6.2 Operations**

The Executive Board will recruit a manager to run the company. The manager will make and supervise the company's operational plan, including rules of employment, procedure for investment planning, and reporting of performance.

##### **6.3 Policies and Purposes of the Investments**

The Board will decide on the general investment policy framework based on following conditions.

1) **Maximum Equity shares of stockholders**

The Company will hold the shares of investees up to 49% of voting shares.

2) **Eligible sector for investment**

All business sector could be considered as eligible for investment, however, the following 13 areas could be considered as priority areas due to their importance for the economy: Food and feed, shoes and leather, lumber and furniture, pharmaceuticals and chemicals, rubber and rubber products, plastic products, ceramics and glassware, electric and electronic products, automobile parts, jewelry, metal, and petrochemicals. In addition, investments could be channeled toward local industries and R&D type industries.

3) **Other investment policy conditions**

Investment policy would also be defined in terms of conditions such as a guideline for investment amount by region, project size, project stage, and so on.

#### **6.4 Selection of Companies to Receive Investment**

The procedures for identification of the companies to receive investments would be as follows.

1) **The company's manager will select projects which are found by the company's own efforts or are recommended from the financial sector.**

MOI, SIFC and other concerned organizations or departments will be invited to nominate investment-deserving companies.

#### **6.5 Performance Objectives and Success Indicators**

The greatest care will be needed in determining the quantitative objectives by which performance will be measured. Two of the most important will be number of companies that receive investments, and the reasonable return on the investment.



## **6.6 Strength**

The Thai Government has shown the initiative to have Government based Venture Capital.

## **7. Expected Benefit of the Project**

SMEs can be raised new capital for investments from other sources than banks.

## **8. Weakness of the Project**

- Lack of persons experienced in venture capital investment
- Condition for Listing on the SET is still hard to clear for SMEs.

## **8.1 Others**

### **(1) Cooperation with MOI, DIP**

After the investment by The Company, MOI through DIP will cooperate with concerning investee to help the investee's demanding points, such as technology up-grade, marketing, accounting etc.

### **(2) Evaluation and Audit of The Company**

The Board of the The Company will hire internal and external auditor for the evaluation and audit the company's management and performance. The auditors will monitor and evaluate the invested projects and prepare annual report to apply to the Board and The Committee.

### **(3) Joint Facility with private sector**

The Company will allow the participation from private sector as joint facility, if it were acceptable.



## **Project No. 2.1 Establishment of a Factory Evaluation System**

### **1. Rationale**

The economic and financial crisis has plunged the industrial sector into a state of stagnation and forced restructuring. Weaknesses have been revealed not only regarding international competitiveness and management in the industrial sector, but also management in general, financing, production, marketing, human resource development and other areas.

In January 1998, the Government of Thailand has announced its Industrial Restructuring Plan, intended to cope with the recession through improvement of Thai's international competitiveness, and export expansion. The Plan consists of eight work plans. "Development of Factory Evaluation System" is a Project No. 1 in the IRP's Work Plan No. 1, "Improvement of productivity and production process for cost and delivery competitiveness." The Bureau of Supporting Industry Development of MOI was given responsibility about this project by the Evaluation System Committee in March, 1999.

### **2. Purpose**

The purpose of establishing the Factory Evaluation System is to provide a tool to improve the management of the small and medium-size enterprises.

### **3. Output of the Project**

The following are key characteristics of BSID's trial operation, to start in June 1999.

- (1) Access to the SME's program loan is the first priority given by the government. Therefore, to assist the policy, the number of trainee is increased from 50 persons to 100 persons, and 50 persons of them are from financial institutions and governmental organizations. 50 persons of them are allowed to the open.

- (2) BSID's course is the first half program of the one-year course because of asked by FY1999 budget.
- (3) Conditions to applicant are 22 to 45 years old and post-graduated people or having over 4 years business experiences.
- (4) The course is consisted of lecture in classroom, case study, and OJT/Evaluation practice. The first one-month is a lecture in classroom. One-week lecture in classroom and case study, and one week OJT/Evaluation practice is repeated alternately in the unit for the next 6 months. This trial course is asked by the government that it makes enterprise to access to the SME's program loan easily with evaluating activity of its training program as above mentioned.
- (5) Evaluation work itself is to consist of the following six steps.
  - 1) The confirmation of the diagnosis process and a Receipt of a request for an on-site diagnosis of a company.
  - 2) Visit to the enterprise by the BSID evaluator, the on-site evaluation, and the collection of materials for analysis.
  - 3) Analysis of the materials.
  - 4) Collation of analysis results with information gained (observed) at the company.
  - 5) A second company visit.
  - 6) Preparation of the evaluation report.
  - 7) Explanation of the report findings, and recommendations, in a meeting with the company representatives.

These are to be carried out in five and a half days.

#### **4. Project Description**

The Team proposes that BSID study and adopt the following in the course of planning the system. It is quite possible that some or all of these items are on the agenda.

- 1) First, an action plan including the goals and expected result (output), required input and processes to be used, for the five-year period, should be established.
- 2) Second, in the execution stage, the five years are divided an initial period of two years followed by a period of three years. The two years are a trial period. The principal object is put there for its expected goal, expected result, and injection for to systematize this system more.
- 3) Then, the plan and results will be evaluated at the time of the trial period completion, when a detailed plan for the next three years will be prepared.
- 4) Program coordination might be managed under "Establishment of pre-credit factory evaluation system acceptable to financial institutions" in the first seven months.

**(1) Program goals**

- 1) A certain number of evaluators are to be trained for the system.
- 2) Establishment of a system of official qualification or certification for "Enterprise Evaluator."
- 3) Establishment of Enterprise Evaluator Training System that it will be sustaining.

**(2) Expected Output**

- 1) Learning of the knowledge to be Enterprise Evaluator candidate.
- 2) Improvement of Management through the evaluations.

**(3) Input**

- 1) Training of Enterprise Evaluators
- 2) Enterprise Evaluation
- 3) Organizing a registration system for Certified Enterprise Evaluators

**(4) Budget and PDM**

As for the plan, the budget plan and Project Design Matrix (PDM) were scheduled. The basic plan itself was made as five years plan. So, JICA's proposed plan is made with according to IRP's.

The budget cost items for IRP Project No. 1: Development of Factory Evaluation System consists of the following.

The enterprise evaluation system design

Training activity

Indicators and benchmark

Registration of evaluators

Evaluation activity and its concerned

A five-years budget plan for the training activity (Table 2.1.1) is calculated here. Cost items and unit costs conform to the 1999 budget for the IRP. The assumptions for budget decisions are: (1) Education and training of this program can be done at the site of the enterprise; (2) It will be possible to Thai instructors to manage this system themselves after five years.

The budget plan is being made as follows. Asterisk-items in parentheses refer to budget line items in Table 2.1.1.

- 1) Number of foreign experts employed under the budget: first two years, 6; third year, 5; fourth year, 3; final year, 2 (\*1)
- 2) Number of foreign experts supported by Japan Overseas Development Corporation: first two years, 4; third year on, 2 (\*2).  
As the number of foreign experts is reduced, Thai experts, will take their place. The Thai experts will have obtained a Qualification of Enterprise Evaluation (CEE) certificate from the Ministry of Industry, after successfully completing a training course.
- 3) Number of Thai instructors employed under budget: first two years, 5; third year, 8; fourth year, 10 or 11; final year, 11 to 16.
- 4) The case study method including SMEs visits, meetings and seminars is the most important method of training as same as OJT/Evaluation practice. The cost for it is included in Evaluation Practice (\*3).  
Enterprise Visit is concerned with OJT/Evaluation. It includes transportation, meeting and so on.
- 5) Cost of Operation and Management (\*4): This comprises the cost for staff, information, collection, printing of advertising materials, telecommunication, transportation and so on.

PDM for this Project is shown in Table 2.1.2. There is a design of this program by the way of thinking shown in Figure 2.1.1. Consideration and

**Strategy 2. Upgrading of Technological and Managerial Capability of SMEs**  
**Project No. 2.1 Establishment of a Factory Evaluation System**

Use for this figure is asked on the occasion of the execution of this project and the evaluation.

*Strategy 2. Upgrading of Technological and Managerial Capability of SMEs*  
**Project No. 2.1 Establishment of a Factory Evaluation System**

**Table 2.1.1 Five Years Budget Plan: Estimated Cost of the PROJECT**

(Unit: 1,000 Bahts)

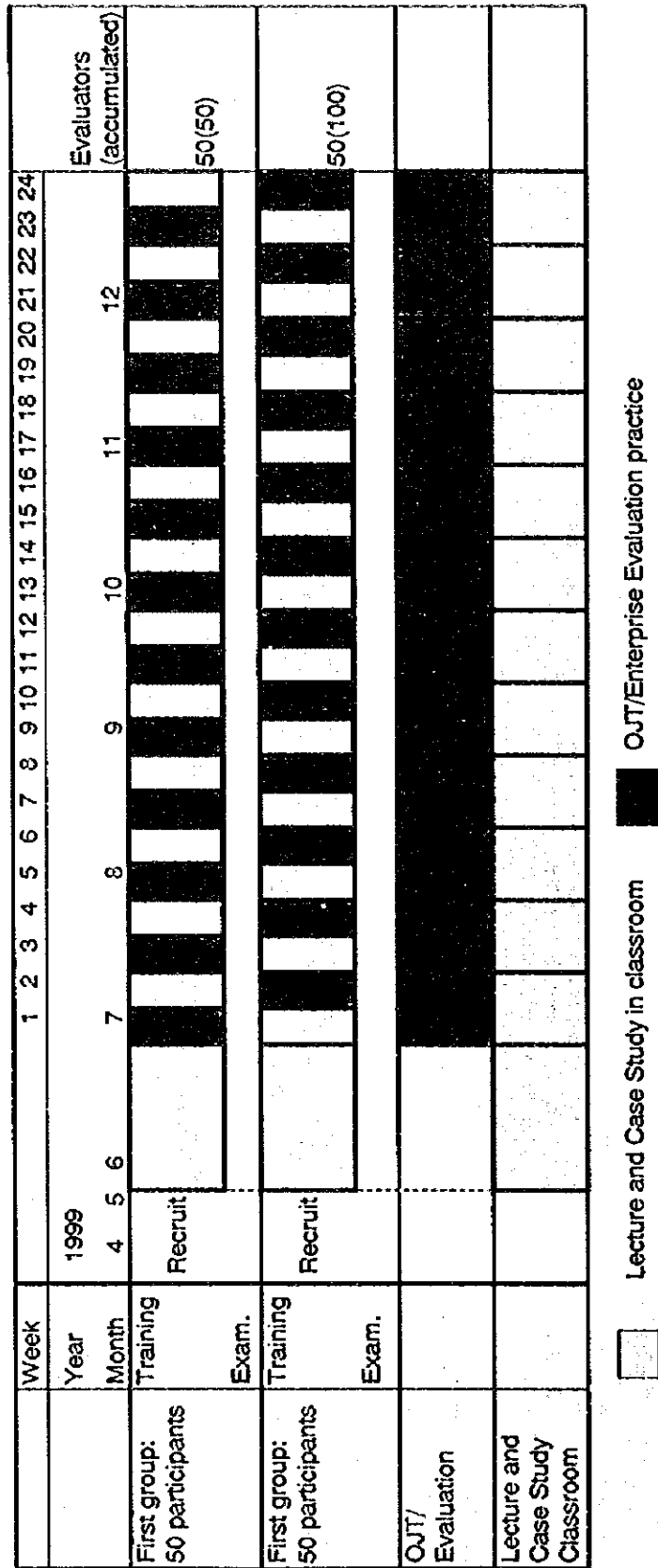
Year	1999.6 - 1999.11	1999.12 - 2001.5	2001.6 - 2002.5	2002.6 - 2003.5	1999.6 - 2003.5	2003.6 - 2004.5	5 years Total
Total cost	42,540	116,160	70,480	64,192	293,372	538,768	832,140
1. Lecturer	20,520	61,560	34,080	27,792	143,952	22,848	166,800
1.1 Foreign Expert*1	14,400	43,200	24,000	14,400	96,000	9,600	105,600
Foreign Expert by JODC *2	0	0	0	0	0	0	0
1.2 Thai Instructor	1,800	5,400	5,760	10,800	23,760	11,520	35,280
1.3 Interpreter	4,320	12,960	4,320	2,592	24,192	1,728	25,920
2. Facility	3,690	11,070	7,380	7,380	29,520	7,380	36,900
2.1 Lecturer's Room	1,350	4,050	2,700	2,700	10,800	2,700	13,500
2.2 Training Room	1,740	5,220	3,480	3,480	13,920	3,480	17,400
2.3 Expendce for Light & Fuel	600	1,800	1,200	1,200	4,800	1,200	6,000
3. Text	3,330	9,780	6,520	6,520	26,150	486,040	512,190
3.1 Text for Lecture	1,440	2,520	1,680	1,680	7,320	481,200	488,520
Lecturer	240	720	480	480	1,920	480,000	481,920
Trainee	1,200	1,800	1,200	1,200	5,400	1,200	6,600
3.2 Text Development (OJT, Case study-Seminar)	960	1,680	1,120	1,120	4,880	1,120	6,000
Lecturer	160	480	320	320	1,280	320	1,600
Trainee	800	1,200	800	800	3,600	800	4,400
3.3 Transiation	930	5,580	3,720	3,720	13,950	3,720	17,670
4. Training	9,000	15,750	10,500	10,500	45,750	10,500	56,250
4.1 OJT Evaluation Practice *3	7,200	12,600	8,400	8,400	36,600	8,400	45,000
Lecturer	1,200	3,600	2,400	2,400	9,600	2,400	12,000
Trainee	6,000	9,000	6,000	6,000	27,000	6,000	33,000
4.2 Enterprise Case Study	1,800	3,150	2,100	2,100	9,150	2,100	11,250
Lecturer	300	900	600	600	2,400	600	3,000
Trainee	1,500	2,250	1,500	1,500	6,750	1,500	8,250
5. Operation & Management *4	6,000	18,000	12,000	12,000	48,000	12,000	60,000



Table 2.1.2 Project Design Matrix of the Project

Narrative summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>1. Overall Goal Improvement of SMEs management</p>	<p>Indicator and Benchmark of SMEs Productivity and Competitiveness</p>	<p>Annual review and data of concerned organisation including DIP, MOI</p>	
<p>2. Project purpose (Program goal) 2.1 To newly create a Factory Evaluation System toward the improvement of SMEs' technology and management 2.1.1 Certain number of evaluators would be trained under the system 2.1.2 Establishment of the official Qualification or Certification for Enterprise Evaluator 2.1.3 Establishment of Enterprise Evaluator Training System that it will be able to go on</p>	<p>1) Number of evaluators (CEEs) 2) Number of training courses 3) Number of evaluated enterprises 4) Legal settlement for the official Qualification or Certification (CEE) 5) Legal settlement for the training system</p>	<p>1) Annual report of the project 2) Annual report of the project 3) Annual report of the project 4) DIP, MOI 5) DIP, MOI</p>	
<p>3. Expected Output 3.1 Learning of the knowledge to be enterprise evaluator candidate 3.2 Improvement of management by doing enterprise evaluation 3.3 The efforts to make self-sufficient conditions for the system will be able to go on (the effort to create the market of the system) 3.4 Foreign technical assistance</p>	<p>1) Evaluation by instructors 2) Evaluation by trainees 3) Evaluation by instructors 4) Number of applied enterprises 5) Number of projects by program loan 6) Number of projects by program loan 7) Evaluation reports made by executive organisation (BSID)</p>	<p>1) Test and Evaluation made by instructors 2) Evaluation meeting among enterprise, instructor and trainees about the recommendation report 3) Annual report of the project 4) Annual report of the project 5) Annual report of the project 6) Evaluation meeting and report made by BSID and trainees</p>	<p>1) Number of CEEs doing consultation 2) Support by SME promotion law, SME policy, and program loan (insufficient in the official support and utilise system for the evaluator under the SME promotion policy) 3) Number of enterprises which were evaluated by CEEs 4) Foreign assistance and technical transfer</p>
<p>4. Activities 4.1 Training of Thai Evaluators 4.1.1 Training course; Lectures in classroom, case study, and OJT/Evaluation practice 4.1.2 Enterprise Evaluation 4.1.3 Organising the registration system for certified Enterprise Evaluator (CEEs) 4.2 Survey of factories (2,000) 4.3 Development of indicators and benchmark 4.4 Execution of factory evaluation 4.5 Establishment of pre-credit factory evaluation system acceptable to financial institution</p>	<p>Input 1) Manpower Foreign experts and Thai instructors, staffs, translators 2) Budget (352.62 Mil. Bath) (The first approved draft budget) 1999.6-11: 42.54 1999.12-2001.5: 116.16 2001.6-2002.5: 70.48 2002.6-2003.5: 64.192 2003.6-2004.5: 59.248 3) Facilities BSID, TPA(TPI)</p>	<p>Pre-conditions 1) Continuous training course with Governmental support including budget 2) Needs for evaluation: applicants (trainee &amp; enterprise) 3) Executive organisation, course design, instructor, staff, facility 4) Co-operation with existing organisations and financial institutions</p>	

Figure 2.1.1 Execution Schedule of the Project



## **5. Implementation Body and Financing Source**

Bureau of Supporting Industry Development and Technology Promotion Association (Thailand-Japan).

## **6. Activities**

### **6.1 Trial Term: June 1999 to May 2001 (Two Years)**

#### **(1) Goals for the first two years (Trial period)**

##### **1) Establishment of certain curriculum and textbooks**

The curriculum consists of classroom lectures, case studies, and evaluation practice. And it is composed of three of the case research, the diagnosis practice. The followings are required of the textbook. (1) The text development and text renewal for the lecture. (2) The textbook used by the case study is developed. (A trainee makes a report as a subject of case study by the example of the evaluation practice.) (3) Preparation of the management diagnosis manual by the type of industry based on that accumulation.

##### **2) Establishment of training course and training of Enterprise Evaluator candidates.**

##### **3) Preparation of a final examination for the training course, and determination of the standards for qualification or certification of candidates.**

##### **4) Training the Thai instructors.**

##### **5) Popularizing the system so that companies request evaluations through the cooperation with the existent organizations.**

##### **6) As for a good enterprise worried about a lack of capital, the system may introduce it to Financial Institution, actively.**

The whole plan and results will be reviewed at the end of the trial period, and a detailed plan for next three years will be devised toward the realization of the project goal.

**(2) Pre-conditions for doing the first two years**

Following pre-conditions would be put in order before proposing the action plan.

**1) Executing organization**

As for the executing organization structure for the first two years, it is described containing the matters depended on the above committee in March 23, 1999.

**2) Planning and organizing the system is to be by the Bureau of Supporting Industries Development. It is to have total responsibility and to undertake the following BSID's businesses.**

- Making the evaluator training scheme
- Planning and securing a budget
- Invitation of foreign experts
- Recruitment and selection of participants, and certification
- Recruitment and selection of applicable enterprises that wants to be evaluated, and Crew grouping.

**3) Classroom lectures, case studies, and OJT/evaluation practice is to be done by the Technology Promotion Association (Thailand-Japan)**

Until this system is operating on a smooth, and sustained basis, the training program portion comprising classroom lectures and OJT/evaluation practice is to be managed by TPA (Thailand-Japan) using the facilities of the Technology Promotion Institute, on the basis of an agreement with the BSID.

**(4) Participants qualifications**

Participant must be over 25 years old and have business experience of more 3 years. Priority is to be given to persons who are engineers, a technicians or experts, or who had worked in the manufacturing industry and supporting industry.

**(5) Basic concept for the training schedule and qualification**

The training schedule is to be for one year, similar to the Institute for Small Business Management and Technology, in Japan. The methods used are to

be classroom lectures including case studies, and OJT/Evaluation practice are repeated alternatively in the unit for two months at a time. All trainees should attend lectures for 6 months and have OJT/evaluation practice for 6 months.

An open seminar should be held in the final part of the program. This seminar is to consist of three parts: trainees' presentation of their final report including a case study, trainees' presentation on the role of and effects of this system, and an evaluated enterprise (or more than one) presents its experience in improvement of management.

An examination should be given when the year is finished. Paper test and evaluation of abilities for problem finding, analysis, and problem solving are evaluated.

Candidates who meet all requirements will get a Qualification of Evaluator from the Ministry of Industry. The name of this qualification is called here a Certified Enterprise Evaluator (CEE).

One reason why the program is to consist of two parts, given one by one, namely lectures and case study work in the classroom and OJT and evaluation practice in the field is that this is believed to be the most effective method of training. As for Case Study and OJT/ evaluation practice by factory visit, it asks that foreign experts with their deep knowledge and experience take care of the limited number trainees continuously. Classroom lectures by Thai instructors and OJT/evaluation practice by foreign experts are repeated alternately in the unit for two months.

The one-year training schedule can be divided into three four-months units, each unit to consist of two months in the classroom and two months at OJT/evaluation practice.

#### **(6) Role of Thai and Foreign Instructors**

Thai instructors are expected to be professors or accountants and mainly will be in charge of classroom lectures. Foreign experts would be as Japanese

MITI Registered Management Consultants, CPAs, or engineering consultants, and mainly in charge of case study and OJT/evaluation practice.

- (7) Cooperation with the existing Thai organizations for information, expansion, and improvement of the system

Nationwide organizations like the Thai Chamber of Commerce and the Federation of Thai Industries have many branches and members. BSID should establish a functional connection with these organizations to disseminate news and information about the system and to seek applications from companies.

- (8) Cooperation with the existing financial institutions to facilitate borrowing by SMEs

A special feature of this project is that it will not only assist SMEs by means of the evaluation service but will also help them to obtain credit for post-evaluation business undertakings requiring working capital or investment capital.

It is expected that this system will identify promising companies that will be able to make significant advances by use of the evaluation service. The follow-up action to implement recommendations made by the evaluators can make a large difference in terms of the company's more easily deserving a commercial loan.

BSID will endeavor to introduce companies that are evaluated in the first two years scheme to financial institutions. It will give priority to introductions to governmental financial institutions at the outset but will not exclude the possibility of introductions to commercial banks.

Funds for such loans 25 billion bahts are to be made available by the Thai Government. The funds are for loans for capital investment and working capital, and will be available for lending by the following instructions:

Industrial Finance Corporation of Thailand	12 billion bahts
Small Industries Finance Corporation	3 billion bahts

<u>Krung Thai Bank</u>	<u>10 billion bahts</u>
	25 billion bahts

As background information it can be mentioned that the loan balances of the IFCT and SIFC have been declining by the NESDB's eighth five-year plan. It was agreed by the Krung Thai Bank and Ministry of Industry that about 10 billion bahts would be available over the next two years for Krung Thai Bank to lend for projects recommended by the Ministry of Industry (January, 1999).

**(10) Cooperation with SME Development Institute**

As mentioned above, the Factory Evaluation System, included in the IRP, has been planned as before the ISMED same project emerged. There should be coordination of the two to avoid the duplication of work on the same project.

**6.2 Plan for the Trial Period Proposed by the Team**

The Team made the following proposal to DIP in March 1999 (a revised paper has been submitted to DIP). The proposal included Figure 2.1.2, "Training Schedule of Potential Evaluators," and Figure 2.1.3, "Number of enterprises to be evaluated in two years. The following is an explanation referring to these figures.

**(1) Original action plan for the training and enterprise evaluation, and expected results (output) proposed by the Team.**

- 1) Preparation term: April and May 1999 (two months)
- 2) Training and Enterprise Evaluation: June 1999 to May 2001 (two years)
- 3) Total number of evaluators: 150
- 4) Examination and Certifications of "Enterprise Evaluators"
- 5) Total number of enterprises to be evaluated: 1,100 to 2,200

**(2) Phases for the training scheme**

**1) Preparation term: April to May 1999 (two months)**

Signing up of trainees, course design, text preparation, arrangements for Thai instructors and foreign experts all should be done during this term.

**(a) Signing up of trainees**

BSID finds the trainees. The first ones to be admitted are to be 50 in

number, and it should be done in April 1999. After then, 50 trainees will be signed up every 6 months (Figure 2.1.2).

**(b) Course design, scheduling, and text preparation**

Under BSID control, foreign experts, TPA, TPI, and Bureau of Industrial Enterprise Development make the design of the course and prepare the textbooks.

**(c) Arrangement for Thai instructors and foreign experts**

Under BSID control, TPA, Bureau of Industrial Enterprise Development, Thammasat University, and foreign experts which are entrusted by BSID make arrangements for instructors and experts.

**(d) Interpreters for foreigner**

BSID should prepare interpreters for the Japanese consultants.

**(e) Budget: requirement and securing**

IRP, and 42 million Bahts have been set aside as the trust fee for the training course, have secured the first budget, 72.1 million Bahts. This budget is the total amount for five activities of the system and only for the first six months (until December 1999) as a trial program. The budget for the training activity is about 42 million Bahts.

Estimated budget items for the training course are (as of April 1999):

- Lecturer: Foreign expert(s) invitation cost (excluding supported cost of JICA), Thai instructors, Interpreter(s)
- Facility: Lecture room and training room, and expense for light and fuel
- Text: Text preparation and development, and translation
- Training: Evaluation practices and company visits
- Operation and management

**2) Trial term: June to November 1999 (six months)**

Thai instructors will give lectures. Foreign experts endeavor to transfer their knowledge and teaching skills to the Thai instructors during this term. At the same time, Thai instructors also participate in the "OJT/ Evaluation practice" with trainees, to improve their knowledge.



**3) Training and Enterprise Evaluation: June 1999 to May 2001 (two years)**

As for the collection, activities of collection for this one-year course should be made 4 times in two years, June and December of 1999, and June and December of 2000.

An examination should be given at the time of course completion, and a certificate of qualification should be given to each successful candidate. It makes Certified evaluator to do evaluation activity by ones own.

**(a) OJT/Evaluation practice**

The OJT/evaluation practice is to be done by a team of one foreign expert and five trainees. They visit the companies together. There are to be 10 foreign experts and 50 trainees in the course. Therefore, there are ten groups in the course in the plan.

Two weeks are needed per company (two companies per month) by hearing from JODC expert who enforced resemblance business with BSID if evaluation will be conducted with OJT/evaluation practice.

A crew can do OJT/evaluation practice in every two months as shown in Figure 2.1.3 without preparation term.

**(b) Factory evaluation by certified Thai evaluators**

The persons who passed the examination after one year of training will be given the qualification certificate and designation by Department of Industrial Promotion. There will be 50 certified evaluators in the end of May 2000, according to the plan.

After some Thai evaluators are certified, one financial evaluator and one technological evaluator will be combined to make up a team and will be assigned to evaluate one enterprise a week, without participation by trainees.

**(c) Total number of companies to be evaluated during the trial period**

The possible number of companies to be evaluated during the first two years will be as follows: (Figure 2.1.3).

**(I) Training course (evaluators and trainees)**

The possible number of enterprises = 1 team per 2 enterprises per month x 10 pairs = 20 enterprises per month

(II) Certified evaluators alone

The possible number of enterprises = 1 pair per 4 enterprises per month x 25 pairs (average for two years) = 100 enterprises per month

There are approximations of capacity. Figure 2.1.3 also shows the situation if the fulfillment rate is 40%.

Figure 2.1.2 Training Schedule of Potential Evaluators

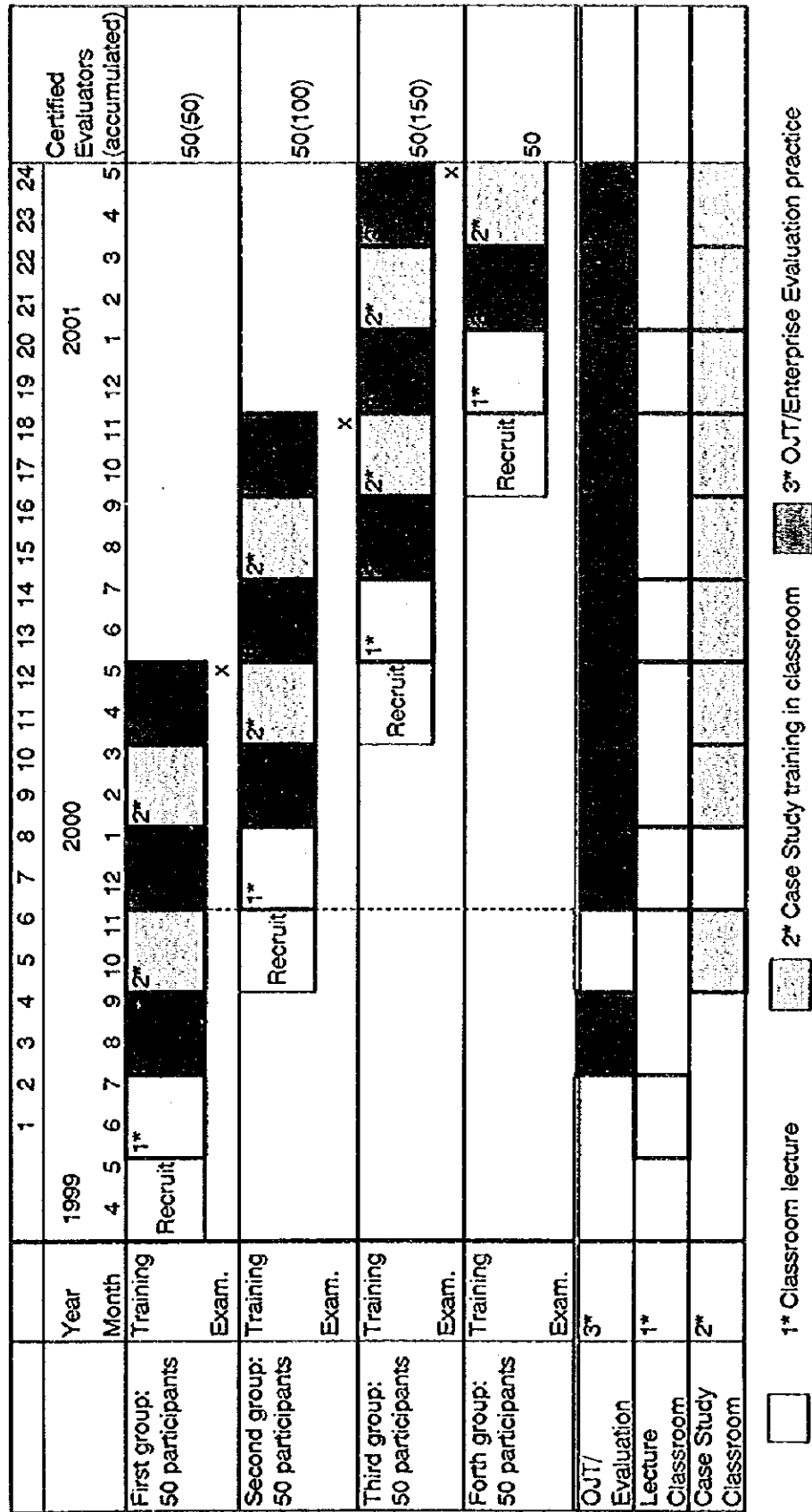
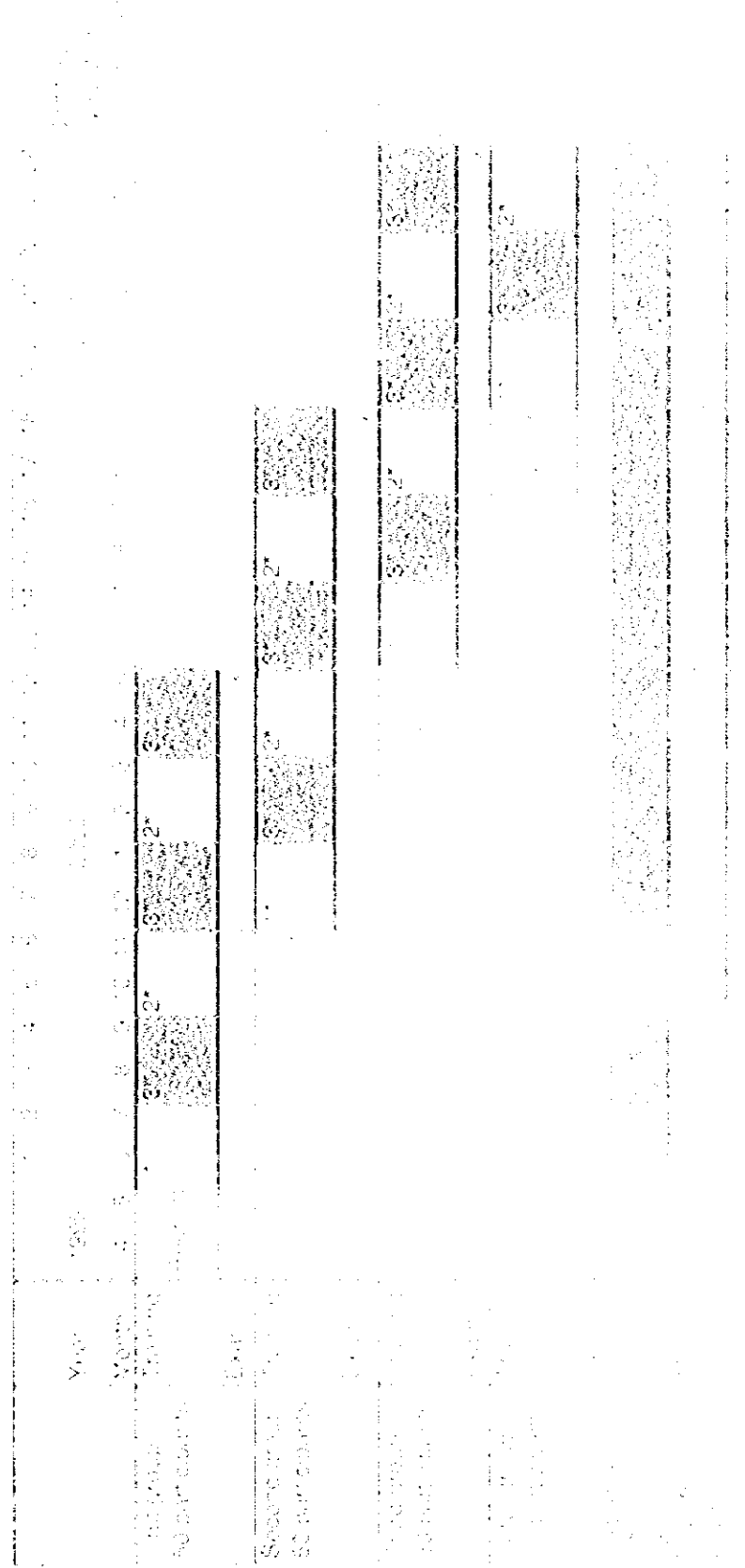


Figure 2-19 Training Schedule for Personnel Evaluation





### **6.3 Procedural Flow of Enterprise Evaluation**

Refer to Figure 2.1.4.

#### **(1) Application and Reception**

A company that wants to be evaluated submits a written application. It could also submit a recommendation from a financial institution or/and assembler and so on.

Applications are accepted at BSID in Bangkok, and the local 11 branches of DIP and Provincial Industrial Office.

At the local level, BSID may consider to entrust the above activities to the Thai Chamber of Commerce or Federation of Thai Industries.

#### **(2) Application Processing**

All application forms are collected at BSID in Bangkok. BSID selects companies with consideration given to the accompanying recommendation if any. BSID accepts or rejects each application.

#### **(3) Planning and Team Formation**

BSID makes an evaluation strategy for each acceptable application, and nominates an evaluation team.

#### **(4) On-site Evaluation; Analysis and Ranking**

The team does an on-site evaluation, evaluates the results of diagnosis, provides guidance for post evaluation, and prepares the Evaluation Report. At the same time, the team ranks (in turn of A good, A/B/C/D) of the enterprise, and provides on-the-spot management improvement guidance to the company.

#### **(5) Study at BSID**

Materials are collected at the company for review and analysis at the BSID office. The materials may include documents, photographs, drawings, samples, etc.

**(6) Recommendation and Evaluation Report**

The team subsequently sends to the company an Evaluation Report including the results of the site work and analysis of materials at BSID. BSID offers to introduce the company to financial institution, with a BSID recommendation.

A copy of the Evaluation Report can be given to a financial institution or operating company when the former company decides to apply for a loan as suggested by BSID.

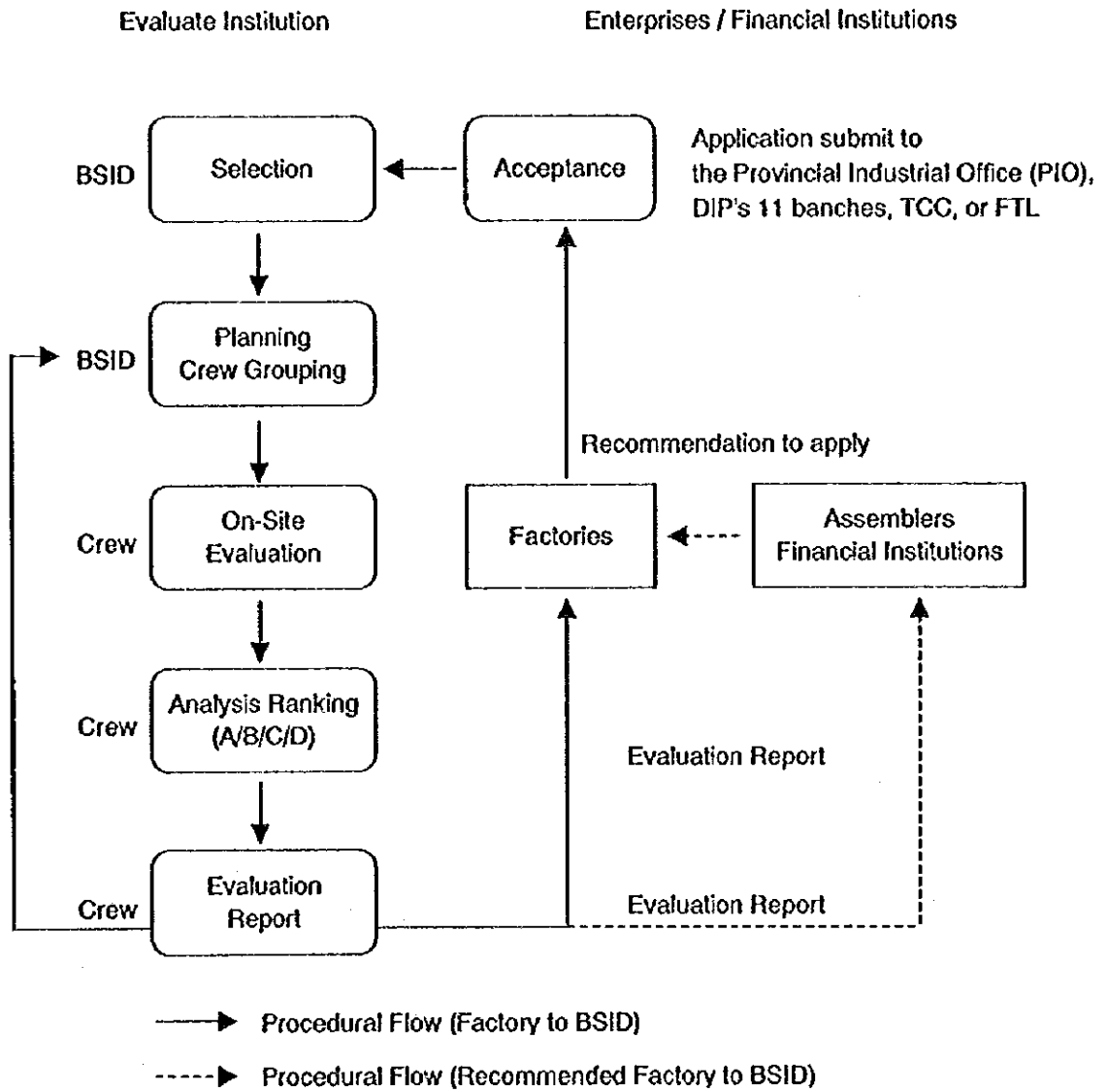
Also at the discretion of the evaluated company, a copy can be furnished to an assembler may who is helping the former company as a subcontractor, by providing managerial or technical support or guidance.

**(7) Diagnosis items**

- 1) General company management
- 2) Financial management
- 3) Production control
- 4) Marketing; sales & marketing strategy
- 5) Material procurements
- 6) Human resource development management

This diagnosis system is named "the Factory Evaluation System " in the IRP. However, not only the production section of the factory but also the overall management of the enterprise is to be diagnosed. It is to be expanded to the commerce, information, and service sectors in the future. For that reason, it is suggested that the name of the system be changed to "the Enterprise Evaluation System " in due time.

Figure 2.1.4 Procedural Flow of Enterprise Evaluation System





## **6.4 Related Action by the Government**

The following three should be prepared because it moves to the official system.

- 1) The law to give an official qualification to the person who carries out a diagnosis.
- 2) The system to do the business of training a diagnosis person.
- 3) A building of database which is accumulated by the experience of diagnosis and its standards.

And, it is to be asked to take the career of the person who tries to get a qualification into consideration on the occasion of your preparing it. The establishment of the system that the following person can take a qualification as is required.

- 1) The person who studies in the educational institute.
- 2) The person who studies in the training institute.
- 3) The person who is trained in the enterprise.
- 4) The person who studies by self-education and correspondence education.

### **(1) Improvement of the scheme for establishment of the basic laws**

#### **1) Legal settlement for Enterprise Evaluation System**

The purpose of the system, Executive organization, Kinds of evaluation and contents, Evaluation procedure, and so on.

#### **2) Legal settlement for Official Qualification for the enterprise evaluator**

Settlement of basic law for Qualification including Conditions the contents of one's duty, the occupation ethics, Responsibility for one's duty, Registration System (cooperation system to the collection, accumulation of the evaluators, information, the diagnosis and human resource development.)

### **(2) Legal settlement for the training system**

It is presumed that the conditions, contents of training, a taking lecture applicable person, and so on are shown to the organization which carries out the training business of the enterprise evaluator. It is necessary to consider about the possibility of the training by private institutions, technical college and Universities.

- (3) Further expected input matters to be improved in the first two years; Training facilities, budget, and staff
- 1) Training facilities: Training and Welfare facilities
  - 2) Budget by the government: Training and facilities
  - 3) Staff: Administration and operation staffs
- (4) Further expected input matters to be improved in the first two years; Design of training program
- 1) Design of basic concept
    - The stipulation of the purpose of the training program for evaluator and decision of the goal for training.
    - The decision of knowledge and ability that are given in the training
    - Total frame decision of the number of the hours to be met above requirements
    - An allowable term and consideration of how to train including bypass course program.  
An allowable month and years, interval training, credit acquisition system, correspondence education training, screening system
    - The training, the training in advance, follow up training
  - 2) Basic design (making the standards to select the textbooks)
    - Contents of subject, the number of lecture and hour, the system of the way of teaching and its execution turn
    - Contents of practice, the number of OJT training hour, and its execution turn
    - Formulation of curriculum (the schedule plan for one year, instructor arrangements plan)
    - Instructors securing the collection of the instructor information and accumulate.
    - Securing of the textbooks: the collection of the textbooks, establishment of own editing and development system for textbooks
    - Securing of the cooperation factory on that OJT/evaluation practice goes, the collection of the cooperation factory information

- Establishment of the evaluation system for curriculums, programs, instructors, and experts by trainees
- Establishment and improvement of the system for graduated evaluators and evaluator information
- Reconsideration of the training scale: the number of applicants and ways of collection, and training fees if full fare will be required to applicant, and so

(5) Development of indicators and benchmark: To develop quantitative measures to be useful for the course

- 1) The maintenance of indicators of the management and the cost (The collection of indicators by the type of industry from SMEs financial statement)
- 2) The maintenance of the other management indicators by the type of industry (for example, moral survey, operating rate of worker and equipment)

## **7. Expected Benefit of the Project**

The sustained execution of this program will improve the management of many companies and the SMEs policy by the government possible. Furthermore, the establishment of the management improvement of the Thai type is made possible. The project is expected to yield the following concrete effects.

- 1) The improvement of management becomes possible by the support at no cost to the evaluated company.
- 2) Management consultation on behalf of the company as a subcontractor is made possible. The system is also available for a parent company that asks its subsidiaries to use the system.
- 3) The accumulated information and experience will be of basic value for other aspects of government policy for the SME support.
- 4) At the same time, government can take a subject in management difficulties which SME faces.
- 5) The needs of these SMEs are committed effectively when it makes use of the project of the policy making and promotion for the SMEs, and use of a public research institution. Thus:

- (a) The offer of a policy for the SMEs like program loan and the diffusion of the SME policy can be attempted.
  - (b) It can think that some incentive is given to enterprise management by giving a citation or the certified model factory to a good management enterprise.
  - (c) In the regional industrial development, by using CEFs, the government could research and evaluate regional enterprises.
- 6) Unification can be attempted by the recognition of the governmental SME policy due to this system.

#### **8. Weakness of the Project**

1. It is necessary to make the necessary efforts to create market demand for the services of the system.
2. It will be expected to make the official system to utilize the evaluator with SME promotion.
3. There are not many qualified Thai instructors at present. It is necessary to train trainers.



## **Project No. 2.2 Introduction of an On-site Technical Guidance System**

### **1. Rationale**

#### **1.1 Basic Concept**

One of the most crucial issues in SME promotion the question of how to transfer technology to SMEs in developing countries. The following Measures implemented in various countries include seminars, workshops, training in classrooms and on the job, technical guidance through technical institutions, on-site technical guidance, and technical guidance by long-term stationing of an expert(s) in a factory. The traditional seminars, workshops and class-room type guidance can hardly provide SMEs with practical technology directly applicable to the tasks of production. Most of these measures are useful mainly for enlightening people with theoretical knowledge, and dissemination of technology as knowledge. Technology transfer, however, is best when it involves on-site technical guidance right at the SME production floor.

#### **1.2 Similar Programs In Other Countries**

Korea has 20 years of experience in an on-site technology transfer program that utilizes Japanese, USA and German consultants as propagators or messengers of technology. The Korean SME Promotion Agency receives applications for technical assistance under the program through its regional offices in each state or province. The applications are gathered in the central office of the Agency and grouped by product and processing method. When there are several companies in a group, the Agency requests its branch offices located in Japan, USA or Germany to select a most appropriate consultant from a prepared database. Then the Agency invites the selected consultant to Korea for short-term technical guidance during a period of one week to one month. The consultant visits some factories that were grouped by product or processing method. The Korean applicants or SMEs can receive the technical guidance of this kind periodically for two years or more.

The Team, UNICO International Corporation, has planned and implemented an on-site technical guidance program in Malaysia for six months, which was successfully completed, the proposal for on-site guidance is based on much industrial and SME experience including this.

### **1.3 Comparison with Resident Expert's Technical Guidance**

In Japan too, there is a system under which a technical expert stays at a factory for one to three years to provide the factory's workers with technical guidance. In this case, however, the factory tends to rely overly on the resident expert. Namely, it tends to become less willing to improve its technology by its own efforts. Therefore, when the expert leaves at the end of his term of service, the factory's technology that has improved will eventually decline to the former level. It follows then that the technology only has been improved temporarily by the expert's effort and that technology transfer in the real meaning of the term has not taken place. By contrast, on-site technical guidance not only stimulates the factory to make voluntary efforts but also reduces the cost burden of the factory.

## **2. Purpose**

To transfer technology to individual SMEs by on-site technical guidance provided by professionals.

## **3. Output of the Project**

- (1) A nationwide network and system for on-site technical guidance
- (2) Establishment of a database of professionals who can be called upon to carry out technical guidance
- (3) Technology guidance for model SMEs periodical and repeated
- (4) Database and manuals for technology transfer to SMEs
- (5) Training of Thai trainees and professionals

## **4. Project Description**

### **4.1 Implementing Body and Acceptance of Applications**

#### **(1) Central implementation agency**

The project entails building a network for collecting requests for on-site technical guidance from SMEs throughout the country and dispatching technical experts to those SMEs. A nationwide network is schemed in Figure-1. Managing this project on a sustaining basis requires a centralized implementing body.

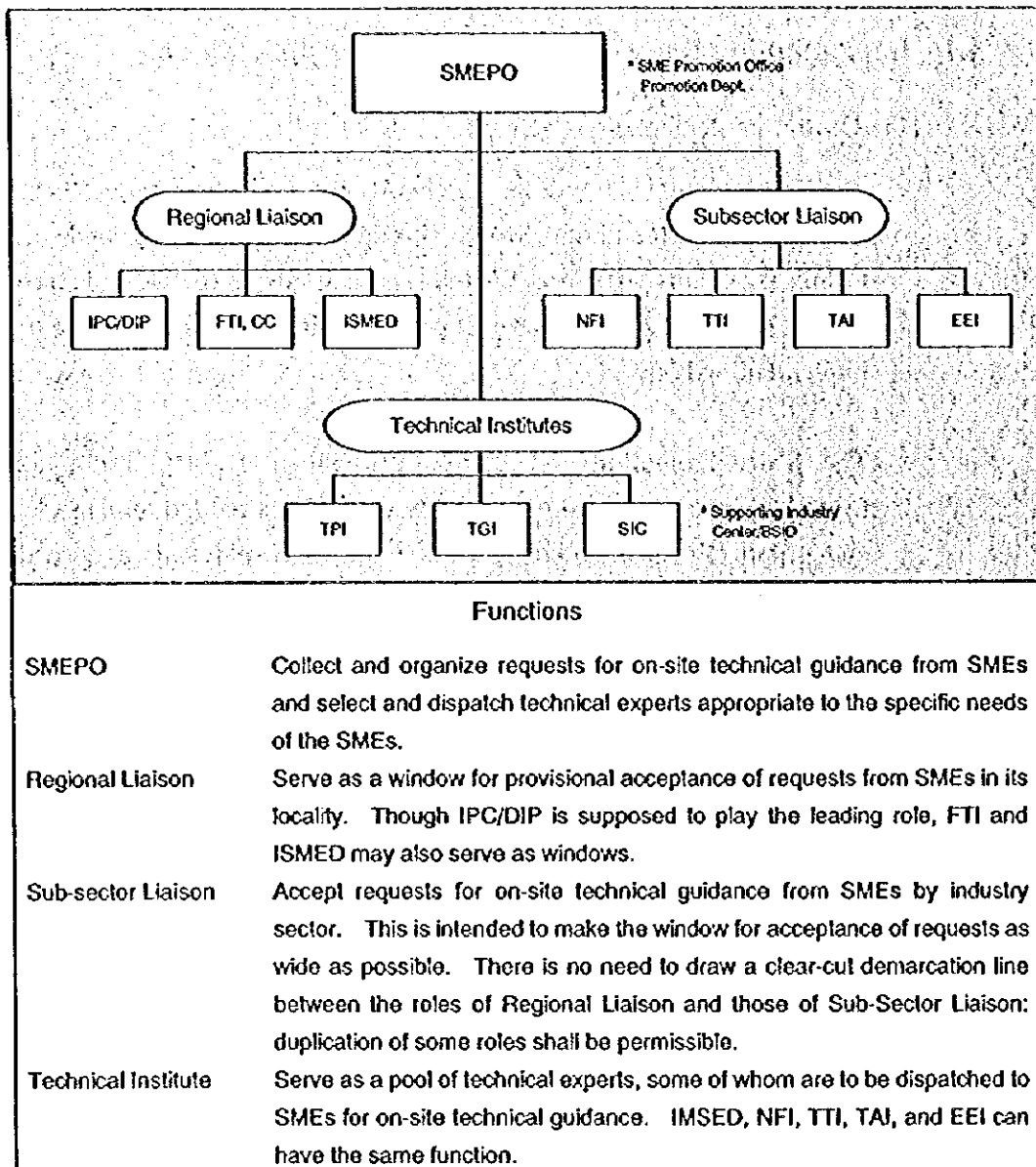
The SME Promotion Act plans to establish a SME Promotion Office (SMEPO) as a key coordination body with SMEs related ministries, institutes and organizations including both the governmental and the private sector. The Team recommended in Chapter 5 of this report that SMEPO have four departments in its so as to play more active roles than coordination activities. The proposed Promotion Department of SMEPO will take care of Project 2.2. Alternatively, a bureau of DIP can manage the Project, but there is no suitable bureau in the existing organization of DIP. In this case, DIP shall establish a new bureau or strengthen an existing bureau in the existing organization of DIP like BINED.

#### **(2) Subsector approach**

Project 2.2 offers an ambitious and experimental attempt to solve the crucial problem extended in SMEs of developing countries, that is "technology transfer." The project is an urgent task to furnish SMEs with international competitiveness recovering the economic crisis. In case that it takes time for establishment of the nationwide organization as proposed in Figure-1, the project can start from subsector by subsector, for example, first autoparts industry by Tai, second electrical and electronics industry being followed by NFI and TTI. Upon success of the subsector approach, it will eventually reach a total system of the on-site technical guidance over the country.



Figure-1 Nationwide Organization



#### 4.2 Technologies to be Transferred, and Technical Experts

Each technical expert to be dispatched for on-site technical guidance must have at least 20 years experience in the relevant ("essential" -- see below) technology and must be equipped with the knowledge of the latest technology, and be capable of providing field engineers, technicians, and operators with guidance in theory, tooling, and operation. This is the key point in technology transfer of quality, cost, delivery and development. At present, there are very few Thai experts who

meet those qualifications. Therefore, Thailand will have to employ foreign experts to play the leading role in on-site technical guidance for at least 10 years or so. As the technology to be transferred to SMEs, essential technology should probably be given higher priority than management technologies. Essential technologies refer the following techniques that underlie production of goods.

Essential Technologies

Supporting industry: Casting, forging, heat treatment, machining, stamping, electroplating, plastic molding, surface mounting technology, circuit printing, tooling, mold & die making/maintenance, others

Consumer goods production: Unit processing technologies for woodworking, food processing, textile and garments, ceramics, pharmaceuticals and chemicals, jewels, others.

#### **4.3 Implementation Procedure of On-site Technical Guidance**

**(1) Acceptance of application**

At intervals of about three months SMEPO shall gather applications for the on-site technical guidance program accepted by IPC/DIP or various other institutes and sort them according to the classification of essential technologies. When the number of SMEs applying for similar essential technologies reaches a certain number, SMEPO will send a member of its technical staff to visit those SMEs.

Since technical problems stated in applications are not always to the point, the technical staff of SMEPO shall visit the SMEs to ascertain their real problems and modify the definition of them (if necessary), and confirm or amend the contents of their applications. After that, the specialty that is required of a technical expert to be dispatched to the SMEs is determined.

**(2) Selection of technical expert to be dispatched**

It is assumed that technical experts shall be invited from foreign countries. One way is inviting foreign technical experts for a short period of time (about one to two weeks) using budgets, for IRP, SME Promotion Fund and others available. This method, employed by South Korea, is one that does not use

ODA from another country. In order to adopt this method, it is necessary for the Thai government to have suitable representation in such countries as Japan, Germany, and the United States and to keep up a database which contains information about competent technical experts of those countries.

Another way is using ODA schemes of foreign countries, to invite technical experts on a gratuitous basis. In this case, foreign technical experts should be invited to stay in Thailand for a comparatively long period of time. Therefore, it will be necessary to select 10 to 20 SMEs from each industry requiring similar essential technologies.

### (3) Method of on-site technical guidance

Each beneficiary SME receives on-site technical guidance for two to three days at a time in one to three months over a period of two to three years. On the first occasion, the technical expert diagnoses the technical problems that the beneficiary SME recognizes as such. The expert then suggests ways to solve those problems. One to three months later, he re-visits the SME to see what action has been taken and whether the problems have been solved. If the problems have been solved, the expert asks the SME to tell him if there are any other problems to solve. If there are some, he suggests ways to solve them. If the initial problems have not been solved, the expert presents the SME with concrete measures to solve them through some demonstration. It can be expected that by repeating this process for two to three years, the technology transfer to the SME will progress markedly. Besides, the SME feels that it has been able to solve its problems by its own efforts. The essential point of technology transfer is not giving a fish, but teaching how to catch fish.

There are two important things the staff of the implementing body or SMEPO are supposed to do. One is that technical staff of SMEPO always accompany the dispatched technical experts and learn from him any new know-how of technology transfer which is necessary for them to become technical coordinators in the future. The other is to organize, record, and accumulate the contents of guidance of the technical experts. Such records can be used to compile technical manuals. In addition, they provide basic data which will

enable Thai engineers to implement on-site technical guidance without the help of foreign experts in the future.

In on-site technical guidance, the technical experts shall not only provide the SMEs with methods of solving their pending problems but also on occasion teach them basic theories through lectures and workshops. After acquiring basic theories, the SMEs should be able to apply them to solve similar problems for themselves.

**(4) Number of model enterprises and number of technical experts**

The relationship between the number of model enterprises (beneficiary enterprises) and the number of technical experts is as follows. The numbers shown are for each industry type, for example, plastic molding. When stamping is included, the number of industries becomes two.

- Each technical expert spends 16 days a month on on-site technical guidance. The remaining days are used to move from one SME to another, analyze problems, and give lectures and workshops.
- Each SME is given guidance for two days on average. The technical expert is supposed to visit the same SME once every two months.
- Thus, each technical expert can take care of 16 SMEs (the total number of working days in two months, or 32 days, divided by two days per SME).
- If not only essential technology but also management technology is included in on-site technical guidance, two technical experts could be assigned.

**(5) Method of bearing expense**

In the case of on-site technical guidance in South Korea, the entire project expenses were initially borne by the South Korean government. However, the government has been applying the benefit principle to more and more projects, aiming ultimately to let each individual enterprise employ a technical expert at its own expense. In Thailand, the beneficiary SMEs should be made to bear a part of the expense from the beginning. Otherwise, the SMEs will not become very serious about the project, in which case the project does not produce anticipated effect. Assuming that 16 SMEs are to bear the

expense of one technical expert, the burden of each SME is a nominal 6.25% of the entire expense. Even when two technical experts are assigned, each SME is only required to bear 12.5% of the entire expense. This is the cost advantage of the on-site technical guidance system.

## 5. Implementation Schedule and Input

### 5.1 Implementation Schedule

In the first year, all necessary preparations shall be made (discussions/studies, establishment of organization). The implementation of the project shall be started in the second year. The project should be continued for at least 10 years or more to obtain the expected effects.

Figure-2 Implementation Schedule

Year	1	2	3	4	5
Phase I:					
Project Preparation	██████████				
Trial in a subsector		██████████			
Establishment of total system		██████████			
Phase II:					
Full-scale implementation			██████████	██████████	██████████

### 5.2 Project Expenses

It is assumed that three essential technologies, for initiation of the project are taken, e.g. plastic molding, stamping, and machining in the parts industry. In addition, on-site technical guidance in management techniques which are applicable in common to the above three shall be provided. Therefore, four foreign technical experts shall be invited. It is assumed that there are 15 model SMEs (beneficiary SMEs) in each of the three industries. It is also assumed that the expense of each technical expert is \$12,500 per month. Then, the total annual expense of the technical experts becomes as follows.

$$4 \text{ experts} \times \$12,500 / \text{mo} \times 12 \text{ mos} = \$600,000 / \text{year}$$

Assuming that the beneficiary SMEs are to bear the entire expense, the share of each SME becomes \$13,333/year ( $\$600,000 \div (15 \text{ SMEs} \times 3 \text{ groups})$ ). When foreign ODA is used or the Thai government bears a part of the expense, the burden of the SMEs decreases significantly.

When the project eventually covers 12 subsectors it costs \$2,400,000 per year as a total.

## **6. Benefits, etc.**

### **6.1 Expected Benefits**

Through this project, useful technology is transferred to the beneficiary SMEs. At the same time, it is expected that through various ripple effects, the project will contribute to the improvement of technology of the manufacturing industries. Furthermore, the project will help foster Thai consultants in engineering.

### **6.2 Creation of Jobs**

At the initial stage for three subsectors, the job opportunity that is created directly by the project will be limited to 10 or so technical staff members who are newly employed for the project. Eventually around 30 persons will be employed as technical staff.

### **6.3 Strength of the Project**

This project tackles technology transfer which has long been regarded as the biggest challenge of developing countries. The point in favor of the project is that several similar projects have been successfully carried out.

### **6.4 Weakness of the Project**

This project directly aims to improve the level of technology of model SMEs and indirectly aims to produce ripple effects. Therefore, it is impossible to increase the number of beneficiaries drastically in a short time.

## **6.5 Success Indicators**

The quantitative indicator of output of this project is the number of SMEs which receive on-site technical guidance. Grade of success is measured by questionnaire survey on performance before and after receipt of the on-site technical guidance especially on decrease in a rate of defects.